HUMAN AGGRESSION:
A MULTIFACETED PHENOMENON

by

J. Martin Ramirez

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FOREWORD

It is an honour to write the prologue to this book, containing selections from the writings of Martin Ramirez over the Last twenty-five years. Martin is a well-known, well-travelled, and well-respected researcher and writer about aggression. Although he started out as a neuroscientist and biomedical researcher, his intellectual voyage over the last thirty years has taken him far away from this starting point. The wide-ranging topics in the chapters of this book indicate the diversity of his interests, which are all variations on the basic theme of violence and human nature. It is particularly important in these days of academic specialisation for there to be researchers such as Martin who can form a broad view of the subject.

The chapters in this book are arranged thematically rather than chronologically, although the order of their original publication is clear from their dates. Throughout, Martin has been concerned with the prevention of violence and the issue of war and peace, which unfortunately is always topical. Two earlier sections are concerned with the concept of aggression, what the term means and where its boundaries are, and the classification of aggression. These are still important topics, especially as researchers have now included covert forms of harming others within the definition of aggression. The substantial middle section concerns Martin's writings about war and peace, beginning with the influential Seville Statement on Violence, of which Martin was one of a number of distinguished authors. Essentially, this was written to counter a seemingly popular academic view of war, which was rooted in psychoanalysis and Lorenzian ethology, and which emphasised its inevitability. Such a view actually discourages the study of the causes of war, and therefore shuts off the ways in which researchers might contribute to preventing it.

Martin has also contributed to the analysis of aggression at an individual level, particularly sex differences and variations across cultures, which are two interests we share. Attitudes to aggression, and how these vary across cultures, are particularly important, either because they play a part in causing aggression at an individual level, or because they provide ways of justifying and excusing it, and therefore making it more of an acceptable option. Martin has recently been examining aggression and pleasure, a neglected topic, but one that I think needs more study, especially among young men who acquire a taste for violence. Finally, there are chapters on the consequences of aggression, in terms of the stress it produces. These remind us why we are concerned about violence in the first place, because of its contribution to the toll of human misery from the dawn of history to the present day. Aggression researchers such as Martin and myself hope we can contribute in our own ways to the reduction of human violence and its impact. But our influence will always be limited without the political will to use the vast amount of research evidence that is already available to inform policy.

I congratulate Martin on having reached the advanced age of sixty, and reassure him that I am not far behind. I hope that we will continue to read his contributions to the study of aggression for many years to come.

John Archer
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President of ISRA

INTRODUCTION

This volume is a selection of nearly fifty papers of mine devoted to the issue of human aggression, which were originally published in several scientific journals and books during the last quarter of century. Most of them were in English, with the exception of a few ones, which appeared in several Japanese journals. The book, which was conceived to celebrate my 60th birthday aniversary, provides me with the opportunity to display a panorama of the research work my coworkers and I have undertaken regarding human aggression during the last 30 years.

The history included in this book, therefore, is in some respect a chronicle of my many years of research on aggression. Although I have three graduate degrees and two doctoral dissertations, my first degree in fact is in biomedical science. After finishing my Ph.D. in Neuroscience, on innervation of brain vessels, in Berlin, I started to train as a physiological psychologist dealing with the issue of aggression and its relationship with the brain, using microelectrodes in electrical and chemical techniques. Working first in Bochum, then in Stanford, I finally returned back to my own country, Spain, with some sporadical short research stays in other laboratories abroad: Sydney, Hawai, Warsaw, Pretoria, and now Quebec. For a variety of reasons I gradually shifted my emphasis more to comparative psychology, extending the number of animal species studied to hamsters, cats, and primates.

In more recent years I have focused my interest on human aggression, the topic of this book. This was a return to the central theme which had attracted me so many years, since I was an undergraduate student: a better comprehension of the human nature. This explains my selection of studies: Medicine, Philosophy and Arts, and Jura, which could be considered as a sort of anthropological meditation. And since I also think that *nihil humanum alienum puto,* it seems to me quite easy to justify why nothing is alien to my interest, and specially what has become the main subject of my research: aggression ad violence, given that unfortunatelly it plays an prominent role in our dayly landscape and even, if I may confess it, in the struggle of my own life.

Throughout these years, I have found useful information for my work emanating from many different disciplines and many different theoretical orientations. Each day I agree more clearly with the tenets of a holistic approach, encompassing psychobiology, social psychology and even anthropology, as the characteristic approach of a neuroscientist has to be one who understands that the study of the human being needs to be a joint product of many different disciplines. Although I have my own theoretical predispositions, Y have found the theories of others to be a useful challenge in my attempts to organize my own thinking in relation to a particular problem. And I have also found the field and laboratory work of others to be valuable to my efforts for Y value data substance about equally than any particular theoretical orientation.

The reader will realize that this book is a repraisal of my earlier statements about these matters. It offers a selective presentation of the multifaceted concept of human aggression. Necessarily many important points of view and empirical research studies have not been mentioned. My attention, however, has not been random, but has been guided by an ecocultural framework that was made explicit at the outset. Central to this framework has been the view that individual human beings develop and exhibit behaviors that are adaptive to the ecological and sociopolitical contexts in which they and their group find themselves. If one wants to understand adequately the human being, we have to frame him within his environment, which is the rest of the nature.

I have also taken the position that human aggression, like any other psychological processes, shows shared, species-wide characteristics. Even more, it is essentially an interdisciplinary topic, drawing not only on psychology, but also on other social, biological, and ecological sciences. These common psychological qualities are nurtured, and shaped by enculturation and socialization, sometimes further affected by acculturation, and ultimately expressed as overt human behaviors. While set in motion by these transmission processes relatively early in life, behaviors continue to be guided in later life by direct influence from ecological, cultural, and sociopolitical factors. In short, in its broadest sense, culture can be considered to be a major source of human behavioral diversity producing variations on underlying themes. It is the common qualities that make comparisons possible, and the variations that make comparisons interesting.

I am aware that nobody can know everything about everything. We have moved far from the time when common knowledge could be expected, at least among a certain intelectual elite of 'Leonardos da Vinci'. Today, on the contrary, ignorance is present even among the most selected audience. And these limitations do not in themelves produce any reaction. I remember hearing a preacher's praise to "that great dreamer of freedom called STEVE BIRO" (sic), and repeated it several times. "It was a lapsus linguae," was the justifying comment of my Southafrican wife, who always thinks in positive (every Southafrican knows his real name was BIKO, and no BIRO), whereas I dared to suggest rather malevolously that he probably did not even know who STEVE BIKO really was. This general consideration is also applicable to our present topic. It is very difficult to embrace the topic of aggression, given its enormity and multifaceted character. No wonder, then, that the literature on aggression is full of conflicting results and interpretations, for its very definition is far from being universally accepted. This explains why it has caused endless confussion, and why the two first parts of the book are focused to the concept and kinds of human aggression.

The 3rd part is dedicated to a series of publications related to the Seville Statement on Violence, which was elaborated by a group of scholars from all the continents. Being concerned about old myths that were trying to justify violence and war as something intrinsic and inherent to human nature and therefore inevitable, we started to work on the statemen in 1982, during the 4th Biennal World ISRA Conference, in Mexico City. Besides giving a more exact knowledge of what

science knows about humand mind, and more specifically about how aggression works, the hope was that by the rejection of these myths would also help people to believe that they could take positive action for peace. The scientific statement was finished in May 1986, during an *ex professo* meeting in Seville. Three years later, in 1989, at the 25th session of the General Conference of Unesco in Paris, its dissemination was decided. It started with the organization of an international interdisciplinary seminar at Yamousutro, in Ivory Coast, as a contribution to further reflection on the subject. Since then it has been endorsed by a large number of scientific organizations. We scientists are aware that the SSV has not said the final word on the subject, given that science, far from being definitive or all encompassing, may be subject to change in the future; but we also believe it was an important first step towards the right direction.

The 4th part stresses the importance of biology in the study of aggression. It includes two review papers focusing on the importance of animal models for the study of the biological bases of the human behavior, and on the role of hormones in the aggression of children and adolescents. The biology and behavior of animals can help us in the knowledge of humans, not only given the important number of parallels that can be discerned, but also because most of the experimental approaches used to study the biological nature of aggresion require certain manipulations which are not possible in human beings. This explains why, being a medical doctor interested in human beings, I dedicated two decades of my life to animal research, mainly in Germany, United States. and Spain. The second review does a survey on recent psychobiosocial studies associating hormones and aggression in children and adolescents, with a special focus on puberty, given the rapid changes in both hormones and behavior occurring during that developmental period. Despite the progress of the last few years, the links between hormones and childhood violence is not consistently reported; it remains woefully understudied, but with a very promising future.

The 5th part deals with a topic that has occupied most of my two last decades of research on aggression: a cross-cultural approach of different psychological processes underlying feelings and expressions of aggressivity. Although the influence of the psychosocial environment on behavior cannot be disentangled from the biological one, cross-cultural studies, with their revelation of similarities and differences among national or cultural groups, can help us to understand which biosocial processes are involved in aggression. Empirical studies in cross-cultural psychology, showing ample evidence of both pan-human psychological qualities, and variation in the development and overt display of these qualities across cultures, allow us to take some steps toward the goal of producing a universal psychology, both in terms of demonstrating how human psychological functioning is similar across cultures and how important differences in behavior repertoire emerge. We have investigated differences between both sexes in several kinds of interpersonal aggression from an ethological approach, as well as using self-report inventories. The patterns of moral approval of aggressive acts of different intensity in different situations from the observer's perspective have also been analysed in studies conducted with different national samples, allowing us to

determine the extent to which moral approval of such behaviors may be universal. Finally, individual differences in the relationship between aggression, anger and pleasure have also been analysed, considering eventual sexual and cultural peculiarities.

Researchers, far from being just seekers of knowledge, have to be an inevitably part of an intercultural process, in which many factors other than obtaining information play a role. This explains why in some of the papers I have touched upon the political and ethical issues that are usually present: recognizing that the interests of the population investigated are also part of their responsibility. I have marshaled points, I believe, to a central and important role for cross-cultural psychology in helping to deal with some of the major social and physical problems facing the world, such as: ethnic conflict and war, and terrorism, a very specific kind of aggression, unfortunatelly too present in ourdays. T the 6th part of the book focused on this topic.

Finally, the last part of the book includes a phenomenon also related to aggression: stress, a word that has evoked great anxiety in basic scientists as the embodiment of unfocused science. It is our hope that the specific topics studied - psychobiological effects of urban stress and of PTSD, and some relaxation techniques for coping with it- may help in gaining an understanding of the biological underlay of adaptation and coping mechanisms.

Each chapter is an independent unit capable of being considered in isolation. Since no material changes have been made from the original papers, there are some redundancies, perhaps too many, I might admit it, and they are obviously pretty consistent among them. I also apologize if the reader feels the same about the abundance of self-citations, but, giving that they seem to stimulate pheromonal vanity among academics, being a psychobiologist, I allowed myself to endulge in them.

I would like to end this introduction showing my appreciation to the many individuals and institutions who have lent me their support during my research; and to those universities that have put their facilities for the different research projects carried out by me in the five continents, and which have been the scientific base for the papers presently edited. I am very gratefull to all of them. And I also extend my aknowledgement to the International Society for Research on Aggression, whose members have kindly elected me in several occasions as an official of their Council, and especially to our President, Professor Archer, who has honoured me prologuing this timely publication.

The final manuscript has been finished at the Vieux-Québec, the oldest city in North America, cradle of the old Nouvelle-France and center of todays Quebécois

consciouness, the 24th June 2003, *Fête de la Saint-Jean, Jour de la Fête nationale Quebécois.*

I. CONCEPT OF AGGRESSION

1.

THE NATURE OF VIOLENCE: ITS REDUCTION IS IN OUR GRASP

J. Martin Ramirez

INTRODUCTION

A climate of violence and instability seems unfortunately to be something endemic to South Africa (S.A.). According to recent statistics, U.S.A. is presented as the most violent nation in the industrialized world: in America, more than two million people are beaten, knifed, shot or otherwise assaulted each year, 2300 of them fatally. No other developed nation comes close; Scotland, the second in rank, has less than one fourth of the U.S. rate of homicides… Well, it appears that in this country there is an even greater escalation of violence and criminal activity. In Johannesburg, for instance, the murder rate seems to be three times higher than that of the worst city in the U.S.A. (see also: Reed, Sullivan, 1987).

Restricting our data to only political violence, even understanding the fact that its distinction from other types of violence is not always clear, the S.A. Institute of Race Relations said in December 1992 that political fatalities since the outbreak of violence in September 1984 which commenzed with a protest against rent increases in Sobokene, have reached more than 15.000. Nearly two thirds of these deaths occurred in the last three years. Unfortunately It appears that all the records are going to be beaten this year: almost 600 for the time beingl. You only have to glance at the headlines: peaceful marches which often degenerate into rampaging mobs who riot and loot; assaults, shooting and killings; emerging businesses which fight for territory and market share; ambushes, abductions, kidnappings, rapes, cold-blooded murders; ransacking of homes and offices, stoning and smashing of shop windows, looting and burning of property, bombing buildings, lobbing of grenades, torching stalls and vehicles; stabbing innocent bystanders, necklacing and burning people to death…

All this litany of misery, reflecting a wide range of violence, is contributing to a spirit of ungovernability and anarchy which will not easily be overcome. What a daunting future the New South Africa faces! But, even if the immediate future of the new S.A. is likely to herald much hardship, there are positive grounds for optimism. It is in this light we have got together. It is our aim to find positive alternatives which may help to ameliorate the described situation of violence. The main message of my intervention is that even if human violence has a biological root, we are in position to control, modify and shape it through learning.

Within the interdisciplinary approach of this present meeting, I shall try not to forget my own professional prospective: namely, the best way of healing, we doctors say, is prevention of the illness. The best way of doing a correct therapy, is doing a thorough diagnosis first. The first step has to be the description of the syndrome [definition of terms and concepts]; then the analysis of the pathology [its

psychobiological mechanisms]; and finally its etiology [its causes] and the eventual pathological course [its consequences]. Once abetter knowledge of the nature of violence has been obtained, it would not be so difficult to prescribe a tough medicine as an adequate remedy. This therapeutic remedy is non other that an enlightened use of education and of the mass-media as a particular educational tool for achieving its control. Thereby we can help remove the obstacles that are destroying a lovely country like this, blessed with so many natural resources, but facing an uncertain longterm future.

As an aside, I would like to make several previous clarifications:

First, for clarity, the description of violent events as well as many other later examples have been chosen from this country today. But these events are far from being unique to this place or to this time. Let me quote an example: "Life was cheap; nothing was absolutely safe or sure; deeds of injustice and violence were common facts in their daily lives. It is in the inner conciousness of moral deterioration and in the loss of self-respect that the nations will chiefly suffer." Anyone may think it's a description of the present S.A., but it happened and may also happen, in another country and at another time. As a matter of fact, this quotation is from the 1913 inquiry by the Carnegie Endowment for International Peace into the causes and conduct of the Balkan Wars, precisely the conflict which led to the World War I. Sadly enough, at the time of writing this, it is an actuality again. The history of other countries with similar problems to yours may help in finding positive solutions or, as in this last example, avoiding the same pitfalls.

Second, I am not in a position, nor is it my intention, to judge the alleged right of the people to a revolution as away of solving their problems. They often think it is, if not the only one, the most adequate way to defend or to fight for their rights.

And third, common sense, historical experience, and scientif work including my own, all reveal that violence generates violence. If one accepts rocketing crime, escalating of violence, intimidation and so on in an attempt to gain control and power, or even only to solve injustice, I doubt if anyone will be able to attain and maintain political or social goals even if they are legitimate. On the contrary, I am absolutely sure that be achieved is an escalation of violence.

CLARIFICATION OF TERMS

Terms such as conflict, struggle, violence, war and terrorism are not always sufficiently differentiated. Let U .S. first start with some clarifications to avoid the usual stereotypes that tend to hinder us. in our understanding.

1) **Conflict is not equal to violence**. Consequently absence of conflict neither implies absence of violence, nor does peace mean absence of conflict, as Frederik W. De Klerk pointed out in his Nobel Prize Winner address2. In fact, there may exist conflicts without violence, and even non-violence may be used as tactical,

strategic weapon in important conflicts, as Gandhi first demonstrated here in S.A, where he lived from 1893 to 1914. You will all remenber the 'most important' incident in the political formation of Mohandas Karamchand Gandhi, just one week after his arrival in this country. He had left Durban by train for Pretoria to begin work on his lawsuit. When the train reached Pietermaritzburg, a white passenger complained about the presence of a "coolie" in a first-class compartment. When he refused to move to a third-class carriage, he was forcibly ejected from the train. Ten years later, in 1903, he founded the "Indian Opinion" newspaper, which played an especial part in spreading the philosophy that gave rise to "passive resistance", as he started to call his movement. As the struggle advanced, this political tactic, first used in South Africa and later in India, was renamed SATYAGRAHA, giving up the use of the term "passive resistance". The same Mahatma Gandhi explained its meaning: "SATYA (truth) implies love, and AGRAHA (firmness) engenders and therefore serves as a synonym for force. SATYAGRAHA, that is to say, the Force which is born of Truth and Love or non-violence"3.

2) **Struggle is not equal to violence**, either. Struggle may be legitimate in certain circumstances. The non-violent novements mentioned above are practical examples of its egitimatation. One of its main representatives, Martin Luther King, Jr., was awarded of the Nobel Prize of Peace. He described the method this way: "While the non-violent resister is passive in the sense that he is not physically aggressive towards his opponent, his mind and emotions are always active, constantly seeking to persuade his opponent that he is wrong. The method is passive physically, but strongly active spiritualy... It is active non-violent resistance to evil" (King, 1958).

UNESCO, commited to struggle for justice and liberty, as you know, has also been in the front lines of the struggle to end the institution of apartheid in S.A., which has been a very brutal manifestation of prejudice, intolerance, and racism.

3) **Absence of conflict is impossible**. Conflicts have always existed in the world and they will continue to exist, because people in disagreement with one another have to coexist… It is impossible to totally eliminate human conflicts. And I hope I am not going to scandalize anybody when I add that it is not always desirable that such elimination should occur. Among humans, one cannot avoid that the different biological, ethnical, historical-geografical, socio-political, cultural-linguistical variables, each with their own aims, attitudes, interests and values, are often in conflict with one another. Furthermore, one ought not forget that conflict helps one mature when it leads to responsible choice, especially on the personal level. This maturity is never attained in the unreal world of those who live in ivory towers, 'bubble children' living inside an isolated plastic envolture, or in the more real but equally noxious world of the spoilt child.

Conflict may also be necessary in contributing to the establishment of complex social organizations because it s a normal, natural part of any relationship. In a few words, conflict is universal and as necessary for life as a spark is for the fire. Rather than avoiding conflict, an attempt typical of many repressive societies which

has been proved impossible and even undesirable, we should try to institutionalize it by means of consensus and, furthermore, teach the mechanisms leading to its peaceful control or resolution, with a commitment to negotiation and compromise, whenever it is necessary. That is the real meaning of peace, according to the all mentioned address of the Peace Nobel laureate, De Klerk.

4) **Violence is not always evaluated negatively**. In some societies, ethnic minorities [Sri Lanka, Malasia, in certain regions in the Philipines (Moros), some people withinthe Basque society, or even unrepresented majorities [like maybe in some sections of S.A.] may resort to violence, which is seeen a legitimate tool to bring about change. In a recent forum on the moral, political and juridical legitimation of the right for intervention4, some thinkers, like Elie Wiesel or Umberto Eco, justified "a necessary violence as the one used in democratic countries by the police against the criminals", or as the one used by the international community in its defense of weakest people, impotent against the evils that humans inflict on one another.

Likewise, in the development of children, aggres acts of little boys are often considered manly and right, whe the same acts would be considered inappropriate in little ~ who are expected to be more delicate (Mendoza & Ramirez, 1985). An extreme example of how we are communicating to our kids different expectations or values according to their gender is the recent report on a group of high school boys in a middle-class Los Angeles suburb in the U.S., who tallied their conquests, scoring points each time they had a sexual conquest. Among many residents there was a widespread perception of the boys as heroes and the girls as troublemakers: "nothing my boy did -a father commented- was anything any red blooded American boy wouldn't do at his age". Also boys' moms reacted defensively, taking swipes at the girls' reputation: "those girls are trash", "it is sad for the girls that they have such low self -esteem that they would do this", but curiously enough they don't find such "no self-esteem" problem in the behaviour of their sons5.

Coming back to our discourse on violence, we still find some people who justify violence as something inevitable, and therefore acceptable, basing their arguments on hypothetical biological findings. According to Tedeschi's theory of aggression as exercitation of power, human interaction has a prevalence of competition instead of cooperation. The perception of injustice in social relations might lead to an aggressive response, triggered necessarily to implant justice, soliciting and re-establishing a relation of equality. The more injustice there is, the more aggression is predicted. Brown and Tedeschi (1976) mention three conditions which could give rise to reprisals: a) deliberate hostility; b) limited alternatives in the others' behaviour; and c) unmotivated injustice [i.e., contrary to the norm code dictated by law or tradition].

Violence, thus, could be away of settling conflicts, although it is not certainly the only one, nor the more desirable one.

5) **War may also be acceptable in certain restricted situations**. In fact, there are those who consider that "the war system, however much deplored, is nevertheless accepted as part of the necessary order of things"6. This type of human aggression, defined as a destructive group aggression which involves the use of weapons, is the result of cultural evolution and therefore it is not inevitable. Richard Leakey (1987) demonstrated that when our species first appeared, it was within a context of cooperation rather than competition. In fact, the cooperation shown by all human societies in food gathering and hunting is one of our most remarkable behavioural qualities. Man was altruistic and cooperative since his beginning. Most phylogenetic adaptations molding our behaviour evolved during long periods of small individualized communities, whereas cultural evolution has altered our environment creating a non biologically made world. The organization of the state has transformed warfare far away from its biological relationships 7.

Given that our nature can be culturally modified, we are able to adapt to a non biologically made world. Cultural evolution may bring us closer to war and possible even destroy us: science and technology have been instrumental in making war more destructive in a more efficient and remote way. Our increasing knowledge of science may have outstriped our capacity to control it (Johnson, 1991). Our chances of failure are great -Gehlen (1980) said that man is the "risked being" -but so are our possibilities for further developement. But, in order to cope with our present situation, we have to take our biological heritage into consideration and, although biological knowledge can be used to justify inhumane measures, as Charlesworth said, "no knowledge is really safe against abuses, and still knowledge is better than ignorance".

Warfare is a peculiarly human phenomenon and does not occur in other animal species. The intercolony conflicts of ants, wolves, monkeys, and chimpanzees do not involve the use of tools, institutionalization, or verbal coordination of behaviour, all of which are common to all human warfare. Its primarily biological connection is through language, which makes possible the coordination of groups, the transmission of technology and the use of tools designed to be weapons, as stated in the Seville Statement on Violence (1986) [see Ramirez, Hinde & Groebel (1987) and Adams (1991), as well as De Waal (1992)].

Unlike human biology, human warfare varies dramatically through time and across geography, as well as both in the nature of its military organization and in the nature of the weapons that are used. It has changed radically over time in ways that are clearly due to cultural rather than biological evolution (Robarchek, Robarchek, 1992), even if human beings posses some innate dispositions to aggression, defense, dominance and territoriality. Warfare, therefore, being a cultural product, can be overcome culturally, provided that what war tries to fulfil, can be secured by other non violent means (Feshbach, 1990).

The problem of war certainly cannot be solved by considering ourselves peaceful by nature and simply rejecting anything that contradicts this conception. There is, nevertheless, a real possibility of creating a peaceful world, however difficult the

process may be. As the Seville Statement of Violence (1986) declares, there is nothing in biology that stands in the way of making a world without war. This variation in occurence and nature over time and space evidences that war is not inevitable. The fact that humans possess the capacity to make war (presumably in part determined by heredity) does not imply that they must make war (Adams, 1990; Scott, 1991) As Eibl-Eibesfeldt repeatedly stresses (1975, 1979, 1982), war is not in our genes. But to achieve peace we first have to know the function fulfilled by war, and then to find alternative ways to fulfil peacefully the functions otherwise pursued by war (Groebel, Hinde, 1989).

6) **Terrorism** involves unpredictable kidnapping, bombing and assasination by individuals or unorthodox groups who create fear and psychosis among the population thereby gaining publicity for their goals which are centered around political, ethnic or religious reasons. This seems to me something ethically condemnable, and unjustifiable, even when done by the most oppressed. It is **negatively evaluated by nearly everybody**, not only in our Western cultural environment. For instance, when the Iranian President Ali Akbar Hashemi Rafsanjani was asked about the infamous Airbus incident, he distanced himself from it saying textually that "if Hizballah commits terrorist acts, we do not accept that, and we condemn it", adding that "we should all cooperate to prevent terrorism. It should be stopped at alllevels"9. Even the Sheik Omar Abdel Rahman professes anhorrence of terrorism although he is widely considered adept at phrasing religious messages that are decoded by some Muslim fundamentalists as incitements to violence such as the New York City World Trade Center bombing in February 1993, or the alleged last preFourth of July terrorist plot…

Abimael Guzman, the founder and high prophet of the Maoist Shining Path movement under the *nom de guerre* Presidente Gonzalo, asserts that violence is the only alternative for Peru, even if innocents get hurt. "For our country to change, we need war. We want to destroy and conquer". He invoked former U.S. Black Panther Party leader Eldridge Cleaver: "we're not part of the problem; we're part of the solution". He accepts violence as an alternative, and sees his movement as an army that makes war, but never justifies terrorism, even if what he proposses may easily be classified as such.

When one tries to justify the performance of violent acts for political reasons, one prefers to redefine oneself as a freedom fighter, such as occurred with the militants of the Basque terroristic organization ETA (Ramirez, Sullivan, 1987; Zulaika, Douglas, 1990), the IRA, or even here in South Africa. They prefer to be called an Army, and want to be treated as that. The most recent case happened after the assasination of Chris Rani. Refering to one of the people subsequently charged with Rani's murder, the BWB (*Boereweerstandsbeweging*)10 stated: "The BWB does not accept that Mr. Walus is a murderer, or a terrorist, but a soldier and freedom fighter for the Boer people"II. Jumping from a Polish emigrant in S.A. to reforms in Eastern Europe, for example, the Poles who beat up the communists might not be considered terrorists, but patriots or freedom fighters.

In conclusion, the very terrorists try not to describe themselves as such; they prefer to be called, in a more aseptic way, opositores activos, as the anthropologist Genoves likes to suggest. Terrorism, therefore, seems to be understood as a "bad term", that "cannot be allowed to succeed", to quote an ANC slogan.

Sumarizing, even if the idea of a society in loving coexistence is not able to be reached, even if the existence of social conflicts is accepted, even if struggle may be legitimate in certain circumstances, even if there are people who occasionally accept violence and war, nobody dares to justify terrorism.

PSYCHOBIOLOGY OF VIOLENCE

We will now consider the principal point of this discussion, namely the biological nature of violence. It is tempting to make excuses for violence. Is an ethnic group, f.ex., genetically programmed for violence just because of their higher crime rates? Could some people be predisposed to violence by their genes? Are they really responsable for all the savagery they may commit? It reminds me of socially conservative times when one tended to say that crime was not one's fault, but put the blame on genes. Don't you remember the tawdry history of reiterated efforts to link genetics and crime? A century ago, Cesare Lombroso claimed that sloping foreheadds, jutting chins and long arms were signs of born criminals. In the 1960's some scientists avanced the notion that men who carried an XYY chromosome pattern were predisposed to becoming violent criminals. If it has agenetic basis, they would say, there is nothing you can do about violence as it would not be a voluntary behaviour.

Let me approach its analysis mainly from the standpoint of the biological factors in human motivation, which is the scientific material I know best. "Human violence is too complicated to be interpreted in simple terms" (Brain, 1985).

1) It is well to remember, to start with, that **behaviour is never inherited** as such, but is always developed. Stimulation and lesion research findings have shown that it is the brain which activates any behaviour, and obviously any aggressive appetence. Our higher neural processes filter internal or external stimuli before they can be acted upon. Our actions are not automatically elicited by them, but shaped by how we have been conditioned or socialized, i.e., in terms of the social context. Electrical stimulation of a precise point of the brain of a cat or of a monkey, for example, produces different responses if it is in the presence of a subordinate opponent or a dominant one (Ramirez, 1981, 1985, 1990, 1991, 1993; Ramirez, Nakaya, Habu, 1980).

2) **We all are equipped genetically to be violent**. The fact that there is little evidence to support the concept of an innate aggressive drive in humans does not mean that there are not genetic components which contribute to aggression (Eron, 1990). Genes are involved at all levels of nervous system function, providing a developmental potential that can be activated only in conjunction with the

environment. Since they have an influence in virtually every behaviour, they might contribute therefore to violent activity as well.

Studies on twin pairs (Rushton, Fulker, Neale, Nias, Eysenck, 1986) documented the heritability of individual differences in human aggression: whereas there were intraclass correlations of .40 for monozygotics, only .04 were observed for same sex dizygotics. Analyses using maximum likelihood model fitting indicated that 50% of variance was associated with genetic effects and practically none with a common environment. When identical twins have been reared apart, if one twin had a criminal conviction, the other twin was more likely to have committed a crime than was the case with fraternal twins.

Adoption studies (Mednick, Gabrieli, Hutchings, 1984) have also demonstrated a large genetic component in accounting for individual differences in crime and delinquency. The adopted children whose biological parents broke the law were more likely to become criminals than were the adoptees whose natural parents were law abiding. Studies on its physiological mechanisms also contribute to the plausibility of the genetic transmission of an aggressive trait: variations in certain physiological systems which trigger aggression are distributed differently among delinquents and nondeliquents (Magnusson, 1985, cited by Eron), and predict aggression in a
healthy group of adolescents (Inoff-Germain, Arnold, Nottelman, Susman, Cutler, Chourosos, 1988). For example, studies at the U.S. National Institute on Alcohol and Alcoholism conclude that people who are impulsively aggressive towards others or themselves and more precisely those who commit impulsive crimes, such as murdering strangers, have lower levels of serotonin; but those convicted of premeditated violence, however, show normal levels (Coccaro, 1993; Coccaro, Kavoussi, Lesser, 1992).

Present experiments with animals, as the ones at the Bowman Gray School of Medicine in North Carolina, suggest that extremely aggressive monkeys have lower levels of serotonin than do more passive peers. Such animals also seem less social: they spend more time alone and less in close contact with others (McGuire, Raleigh, 1987; Raleigh, McGuire, 1990; Raleigh, McGuire, Brammer, Pollack, Yuwiler, 1991). We are also carrying studies with hamsters which suggest that drugs that increase the level of serotonin [buspirone and gepirone, in our research] may calm people (Onyenkwere, Mendoza, Ramirez 1993a; 1993b; Onyenkwere, Ramirez 1993a; 1993b; 1994).

In a recent study on the genealogy of a Duch family, some episodic violent actions with aparently no motive showed up in several males across several generations, but not in females. A research group of the Nijmegen University12 suggests that this behavioural trait may be transmitted by a recessive gene linked to the cromosome X. Biochemical essays and genetical tracers suggest that this precise gene would be a carrier of the enzime MAO [mono-amino-oxidase] A, which might deteriorate certain neurotransmitters related to the response to threath and stress.

There is also an accumulating evidence for individual differences in aggression. The predisposition differs according with the specific personality of each individual; each one has more or less importance given to each factor. It can be described as a personality trait. There are pro-aggresive and anti-aggressive personalities, and both of them may be lasting (personality, behavioural norms, previous experience, expectancies, beliefs…), or situational (transient, external to the own person).

Just because an individual possesses a particular combination of genes contributing to violent tendencies, it does not follow that the individual must express whatever capacity he has for violent behavior, or even that it must be developed, actually becoming violent, since factors other than genetics are always involved in development. It is wrong to say you cannot change because it is something your genes have determined. We need not accept human aggression as fate: "we shall not improve our chances of counteracting [intra-specific aggression] if we accept it as something metaphysical and inevitable, but on the other hand, we shall perhaps succeed in finding remedies if we investigate the chain of its natural causation" (Lorenz, 1963). The aggressive behaviour therefore is one of our response repertoire designed by biology to deal with eventual situations in which it may be used, as we will point out next.

Previously, however, let us remember that, since genetics is the science of variation expressed in terms of probability, what it determines is: a) there will be genotypic variation of some degree within a population, and b) the probability that this will be expressed in some way: anatomical, physiological, behavioural [penetrance is the probability that a particular gene will be expressed]. One person will behave one way, another person will behave another way. Genetic determination [the expected probability that a particular character will appear at a particular time and under a given set of circumstances] is inherently probabilistic.

In a few words, violence is influenced by genetic inheritance, but it is not directly determined by it. Rather than causing behaviour directly, the genetic code controls the production of chemicals called enzymes which operate at the level of the body's cells to control their development and function. Furthermore, because a given individual has a particular combination of genes, it does not imply that he must behave in an aggressive way; but only that he is more likely to behave in that way than other individuals with a different combination (Scott, 1987, 1991).

3) **This genetical 'predisposition' is modulated by many circumstances**. Among others, poverty, bad health and undernutrition, abuse and neglect, and other negative experiences, especially during childhood, are an obvious risk of violent traits. The eventual genetical 'predispositiOn' to violence can be altered by complex evolutionary strategies enhancing or reducing the use of aggression (Knauf, 1991; Silverberg, Gray, 1991); the abuse of steroids and other drugs13, the motivational complexity of aggression (Attili, Hinde, 1986); impulsivity and emotive excitation even of the mother during her pregnancy (Clarke, 1993)14; the maturity of the subject; the ecological realities of neighboring societies; different situation circumstances, such as being observed instead of acting anonymously, or the kind

of place [a behaviour is not the same in church, at home or in others , territory, in a bar or in the street, in the darkness…]; the availability of weapons. . . , and mainly, education. The aggressive tendencies, therefore, may be changed, enhanced or inhibited by learning.

According to Al Bandura's theory of social learning (1973, 1977), there is a considerable influence of models and imitation: the family, famous figures or one's own idols and the society in general. All these can act as positive or negative models, instilling long-term norms for social control, moral values, and maintaining the levels of violence of the culture. In acknowledging these modulating possibilities, we would be alerted to seek other environmental or learning tools in order to avoid or minimize potential danger. For example, putting an enclave of Zulu hostel dwellers in the middle of a Transvaal township with Xhosa residents is obviously asking for trouble.

Genes are part of the story, but it's not all the story. They are co-involved in establishing our behavioural capacities, but they do not themselves specify the outcome. Although there may be a genetic predisposition for violence or selfishness, as there may also be for non-violent behaviour and cooperation (Barnett, 1981), many different internal and environmental circumstances participate in the modulation of the diverse propensions. Therefore, there is freedom of choice. While individuals vary in their predispositions to be affected by their experience, it is the interaction between their genetic endowment and the environmental conditions that determines their personality. We must not give up the fight to curb our excesses. According to Len Berkowitz's eclectic model (1962, 1986), there is a dynamic interaction between an innate disposition towards aggression, external stimula which activate such a disposition, and environmental conditions stimulating or inhibiting the open expression of the aggressive acts.

Heredity and environment are intimately entwined, therefore, influencing each other. Biology may affect behaviour, but also viceversa, behaviour and experience may influence biology: a child with a fearless personality, f.ex., may turn into a criminal if reared in a chaotic home or society, but he may become a sucessfull entrepreneur given astable upbringing. Social factors, therefore, can facilitate aggressive behaviours, but also they are able to overcome them.

4) The fact that aggression has a biological root, is stimulated by different motivational systems, and modulated through along phylogenetic development, does **not** means it is **unavoidable and excusable**. The sex drive is also innate but alterable, and not always has to be acceptable. It is incorrect to say that because something is biological or rooted in heredity, there is neccessarily no hope for change, or there is no choice. On the contrary, we may control it, elucidatibng its nature through the knowledge of its biological preserving-life processes, and physiological mechanisms. Learning, therefore, plays an exceptionally important role in the shaping of aggression, its modification, and its restriction. One can learn to react contrary to one's primary disposition by reinforcement of the "deviating" response. But the learner has constraints on learning, depending of the different

types of physico-chemical changes in the relationship between specific type of living cells (i.e. neurons) involved in learning. Not only do we find some things easier to learn than others, but also some may find the same thing more difficult to learn than 0others (Hinde &Stevenson-Hinde, 1973; Pellis, 1993).

CONCLUSION

Aggression, to put it bluntly, is a multifactorial, multidetermined behaviour, composed of inextricably interwined processes: genetical information, innate motivations, environmental factors, and learning. It can be understood as having evolved in the service of a number of functions. As Lorenz (1963) pointed out, it does not make sense to ask whether aggression is innate or not, but whether phylogenetic adaptations contribute to perception, motivation, motor output, or even channeling learning dispositions. We are then encouraged that aggression is a pervasive trait that can be alleviated. Its reduction is not beyond our grasp.

Let me finish this chapter with what a participant in writing of the Seville Statement on Violence, Federico Mayor Zaragoza, pointed out in his inaugural address as Director General of UNESCO: "It is not true that conflict is inevitable, and it is not true that humanity naturally tends toward aggression and war. There are no genes for love, nor are there genes for aggression. One is not born this way or that. One is made through education, through development"15. And that is going to be the topic of a next chapter on Education as Peacemaker.

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(1) Up to Juli 1993. Since writing this chapter, events leading up to the elections have unfortunately resulted in an acute increase in violence and these figures. The Human Rights Commission has recorded another 4.500 deaths since the election date was announced in July 1993.
(2) Stokholm, December 10th, 1993.
(3) in *Illustrated History of South Africa: the real story.* Cape Town: The Readser Digest, 2nd edition, 1989, p. 275.
(4) held at the Sorbone University, paris, December 16th-17th, 1993.
(5) *Time*, April Sth 1993
(6) Leonard C. Lewin, *New York Times*, March 19th 1972
(7) see accounts in stateless non-literate tribal societies (Meggitt, 1977)
(9) "Time" May 14th 1993
(10) The Boers Resistance Movement is a militant far-right organisation formed in reaction to the new 'placate and concede' policy of the ruling National Party.
(11) *Beeld*, April 13th, 1993
(12) Hans Brunner, from Nijmegen University, published in the *American Journal of Human Genetics* (1993)
(13) Some research shows the danger of anabolic steroids in inducing severe adverse psychiatriC affects, such as antisocial violence (Lubzll, 1989)
(14) Susan Clarke, working at the University of Wisconsing's Harlow Primate Laboratory, has suggested the influence of prenatal streSS on young animals: they

manifested a heightened sensibility to stress, higher levels of aggression, and reduction in behaviours conductive to social harmony.
(15) UNESCO, Inaugural Discourse of Federico Mayor, General Conference 24th Session, Paris 1987 (translated from the Spanish original).

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2.

AGGRESSION: CAUSES AND FUNCTIONS

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ABSTRACT

An interdisciplinary approach is needed for the analysis of aggression, since it is a term with plenty of meanings and multifactorial causes: it is composed of intertwined innate elements, environmental factors and learning. Aggression is not absolutely negative: it can also have positive psychobiological functions for the individual and for the society, but usually there are better alternatives. The fact that one possesses the capacity to be aggressive does not imply that one must be aggressive: aggression can be controlled.

Keywords: aggression, biology, cognition, environment, frustration, instinct, learning

INTRODUCTION

We will address several theoretical perspectives regarding the nature of aggression, its antecedents and its consequences, suggesting a rather eclectic polyfactorial approach as a better choice for its study. We shall also explore different directions in the research on aggression which ponder the question of why one is prone to aggression and, assuming that aggressive behavior is not inevitable, how to prevent or control such behavior.

But the starting point has to be to offer a working notion: what we are looking for, which events precede it, and what kinds of consequences it is likely to have. Otherwise, we might be talking about different things, but calling them by the same name. What is the everyday meaning of a term like 'Aggression', difficult to define precisely, given its lack of univocity? Far from being a unitary trait, aggression consists of several behaviors which may be similar in appearance but have separate genetic and neural control mechanisms and are instigated by different external circumstances (see, among others, Ramirez, 1981a, 1981b; Ramirez, Nakaya & Habu, 1980; Shishimi, 1981). It is therefore an omnibus term with a surplus of meanings, related to different kinds of behavior subsumed under this general rubric of aggression. Strictly speaking, 'aggression' is an external overt action, a behavior. And we describe this 'aggressive behavior' as the **delivery of** any form of definite and observable **harm-giving behavior towards any target** (Ramírez, 1985, 1994).

The 'nature-nurture' problem, as Francis Bacon termed it, is a perennial controversy between instinct [behavior which is inner-determined] and environment influences. Related to our present topic, it may be expressed by the following question: Do we fight our own kind because we harbor an innate [built-in] predisposition for such behavior [an innate instinct, spontaneously expressed], or is it learned/cultural factors that account for its expression, it being just a response to adverse external circumstances such as frustration or pain? Although fundamental in the early days of psychology and still a most popular focal point for the discussion of 'aggression', it does not exist any more as a serious controversy. Extremist attitudes of those interpreting aggressive behavior strictly as something exclusively fixed, innate and instinctive (ex. Dart, 1953), on one side, or learned (ex. Montagu, 1976) or a mere excusable response to external events which also justify it, on the other, have been generally abandoned in our days. Even the term ‘learning’ is beginning to be considered as too loose, general and imprecise for being useful to any rigorous description of behavior (Barnett, 1963).

Although this dichotomy has become an obsolete issue [today nobody challenges that all complex behaviors, including 'aggression', reflect an interwoven interaction of hereditary and environmental elements which are not easily separable, since both sets of influences have a subtle and continuous reciprocal interaction in the determination of these behaviors (Ramirez, 1978)] or at best an arbitrary one [it is somewhat difficult to establish where the nature variables end and the nurture variables begin], it may still be appropriate to follow this classical approach in providing the reader with an adequate overview on the different theories about the origin and nature of aggressive behavior.

'NATURE' APPROACHES

According to the nature approach, aggressive behavior is inborn rather than acquired through experience and learning. It emphasizes the biological events that influence aggression, understanding this to be a kind of pre-programmed drive or spontaneous instinct, inherent to our nature.

In its most extreme sense, aggression would be strictly internal, instinctive, and spontaneous. This inner force or drive, selected through phylogenetic evolution and passed on to the offspring through patterns of inheritance, is frequently described as 'innate' and 'instinctive', and being something inevitable; even when no external stimulus is present, aggression may surface like oil from an oil well. Consequently it would be practically impossible to transform the individual nature for the better. Forgetting this biological message, through a belief illusion in non-violence by learning and education, would lead to fatal danger. We have to accept aggression and violence as an adaptive tool necessary for survival (Daniels, Gibula & Ochberg, 1970). That's how Desmond Morris (1969) describes our towns, as jails where anonymous violence prevails; or how Alexandre Mitscherlich (1969) describes man as a marionette who has to submit to all his unconscious instincts. Assuming it is something necessarily destructive or, at least, very difficult to eliminate, the main law of life would be the 'law of the jungle'. Violence, the most radical expression of aggressiveness, has to rule the world.

Most authors, however, even when presenting aggression not as a learned behavior but as an instinct or drive, defend the plasticity of instincts (very few of them are seen as fixed action patterns) and its positive function for the preservation of the individual and the species rather than accept the immutability of its destructive effects. Being instinctive and inherent to our biological constitution thus does not imply that it necessarily has to be triggered.

Typical representatives of this approach are the psychoanalytic, ethological and sociobiological theories:

a) Sigmund Freud (1915, 1920), in his early writings, saw aggression simply as a reaction to the blocking of libidinal impulses; it was neither automatic nor inevitable. Gradually he came to adopt an extremely pessimistic position: aggression was a death wish, innate and inevitable. Men were driven to behave in certain ways by energy; the energy behind these urges had to find its expression in some form or another, with the two most basic internal drives being aggression and sex. Aggression was the destructive counterpart of the life-promoting force that each of us had: the libido. If men retained this energy, aggression would inevitably occur, even when there were no external circumstan ces or events that might justify it.

But, although there may be a certain innate disposition towards aggressiveness for relieving hostility and for turning the death wish away from the self, we are able to liberate ourselves from it discharging its destructive energy: by releasing the accumulative energy in socially acceptable ways, such as sports [otherwise, it would spill over in socially unacceptable ways], or by catharsis via **psychoanalysis**, even if this "is not able to inhibit all man's aggressive instincts as such, but, by reducing the anxiety which surrounds this instinct, it is able to reduce the mutual reinforcement which incessantly acts between love and hate" (Klein, 1950). The performance of any cathartic effect, however, would be quite minimal and short-lived (Baron, Richardson, 1994).

b) For Konrad Lorenz (1950,1961,1963,1964,1965), one of the most notable representatives of the school of **ethology**, aggression is a spontaneous innate instinctive drive which can only be truly understood through phylogenetic analysis. His behavioral model shows a hydraulic system that accounts for behavior through the effects of action-specific energy which resides in the central nervous system. This energy is released when a releasing stimulus, f.ex. some physical feature of a conspecific, fits the innate releasing mechanism, as a key fits the lock, allowing the energy to flow to a smooth and coordinated form of instinctive behavior. According to him, overt aggressive actions are a joint function of the accumulation of energy spontaneously and continuously generated at a constant rate, and the presence of environmental eliciting stimuli. Whereas there is a propensity for aggressiveness which is instinctive -not learned- built into the organism, the role of the environment is to provide the key stimuli that elicit fighting [releasers] and stop it [counter-releasers].

The existence of innate releaser mechanisms has been abundantly documented for a great variety of lower vertebrates, although it is still controversial in higher species and primates in particular. Evidence demonstrating counter-releasers, i.e. characteristic body features or

behavioral displays that serve the inhibition or cessation of aggression, is less abundant, and in no way supported: generally speaking, fighting seems to be discontinued simply because one of the antagonists removes any aggression-promoting releasers, withdrawing or displaying non-specific signs of submission (Barnett, 1963). Generally speaking, fighting seems to be discontinued simply because one of the antagonistics withdraws or displays no-specific signs of submission, removing any aggression-promoting releasers. Damaging as it may seem to the analogy between lower and higher species, there is lack of evidence in favor of his assumption that behavioral organization is essentially the same at all levels of evolutionary advancement; it seems unwarranted and unjustifiable (Zillmann, 1979).

In spite of being an innate disposition heavily dependent on genetics, aggression can be manipulated, excited, dominated or even neutralized by experience or by socialisation; its destructive effects are not necessarily inevitable, which does not mean that it is a totally learned behavior. Highly developed organisms have the capacity to learn to respond to environmental settings related to aggression. Aggression thus is not immutable but an influenceable behavior, at least in the short term, as Kirsti Lagerspedt (1964,1969) showed in mice: the possibility of fighting acted as a learning stimulus. In the long term, on the contrary, the discharge of aggressive impulses, far from having any cathartic effect, constitutes a kind of training for aggression (Eibl-Eibesfedlt, 1970). His proposed overriding importance of the innateness of the mechanisms in the elicitation of aggression, however, has remained a controversial issue because in the judgement of some biologists (Lehrman, 1953, 1970; Schneirla, 1959) the involvement of learning has not been ruled out decisively. It does make more sense, however, to ask whether phylogenetic adaptations contribute to perception, motivation, motor output, or even channeling learning dispositions, rather than whether aggression is innate or not.

Social forms can neutralise aggressiveness by ritualization and, in the human case, by rationalization, fomenting appeasement mechanisms, forming emotional links [personal relationships usually lessen aggressive relationships], and using escape valves which permit an outlet without the necessity of resorting to destructive aggressive acts. The energy associated with aggression is cumulative: if it is not regularly discharged by appropriate releasers, the internal accumulation of aggressive tension will periodically be discharged toward inappropriate ones, unless one possesses the appropriate escape valves, and finally erupt spontaneously in a stimulus vacuum (Lorenz, 1963; Eibl-Eibesfeldt, 1971). Anna Rasa's study (1969) on *Cichlidae* is the most direct demonstration of the spontaneity of aggression: in this species of fish, during the reproductive phase, males were highly aggressive among themselves in the delimitation of their territory but very peaceful with their females; when a male was deprived of the opportunity to attack his rivals, however, because no other males were around, then he became aggressive against his mate, discharging his aggressivity on her [In the human species, it usually occurs inversely: the stress, charged and retained during work, is discharged at home]. There is no neurophysiological evidence, however, of any organismic structure that accumulates energy to a point at which it is forced out independently of any stimulus (Hinde, 1960, 1970; Scott, 1981).

c) For Edward Wilson (1975), founder of **sociobiology** [as a matter of fact, was really W.D. (Bill) Hamilton who a decade earlier inadvertently founded the field of research now known as sociobiology; he was who, in a paper published in the *Journal of Theoretical Biology* (1964), roughtly gave the idea that if apparently altruistic behaviour carries a big cost -such as death or sterility- then it will happen only if the organisms are near relatives, and have a high proportion of genes in common; if gene-spreading is the aim, helping to rear a sister's children can sometimes be more effective than having children of your own], genes endure because they produce adaptive behaviors. They are adaptive to the extent that they contribute to reproductive success, thereby ensuring their continued representation in future generations. Accordingly, aggressive interactions are one way of enhancing the reproductive success in an environment which has limited resources. It is a response to a challenge over important resources or over one's position within the group. Aggressiveness is the means whereby individuals attempt to get their share of the resources that provide selective, ultimately genetic, benefices (Barash, 1977). Being in continuous evolution (Scott & Fulter, 1965), there is a high degree of hereditability, but also a capacity for learning.

NURTURE' APPROACHES

The nurture approach, on the contrary, far from believing in the aggressive nature as some spontaneous drive, emphasizes that this behavior is rather a response to unpleasant circumstances, and predominantly a product of external environmental conditions (frustrating, aversive and arousing events). In its most extreme form, the exclusive influence of social factors, such as frustration and threat of danger, is defended and a total plasticity of the individual is assumed. In fact, the individual is presented as a 'marionette' or ragdoll socially manipulable *ad infinitum*. In the face of extreme despair, fear, pain, suffering, threats, provocations or harrassement, the only recourse is the elicitation of an indifferent violence which is directed against everything and all. Would a world without such instigators therefore allow us to live in peace and serenity with one another? An optimistic answer to it, we must admit that, is difficult to believe.

The more emblematic theories of this approach are: frustration, social learning, social cognition, and associationism.

a) The **frustration-aggression** hypothesis (Dollard, Doob, Miller, Mower, Sears, 1939) assigned a prominent role to learning in the performance of aggression, being concerned with the manner in which individuals learn to perform aggressive acts. Aggression, defined as “an act whose goal-response is injury to an organism”, implies intent to injury as an essential feature; and frustration is defined as “an interference with the occurrence of an instigated goal-response at its proper time in the behavior sequence”, i.e., a failure to achieve an accustomed reward or to reach a valued goal. They assumed that we are not aggressive by nature, but because of frustration, and its premise -when individuals become frustrated, they respond aggressively- was stated explicitly in two assertions: 1) frustration

always leads to some form of aggression; and conversely 2) aggression always stems from frustration, becoming its indicator.

One of the frustration theory formulators, Neal Miller (1941) quickly made a prudent correction to their first assertion, denying its inevitability: frustration leads to aggression generally, but not always. Instead of producing aggression directly, frustration instigates a number of different types of response, aggression being only one of them. Because of their past learning and personality development, individuals may have other possible reactions to frustration, ranging from resignation and despair to overcoming the obstacles; they may also react by turning their aggressive feelings inward themselves [introversive] and become depressed, withdrawn, or guilt-ridden (Baenninger, 1994).

Related to the second assertion, aggression is not dependent on frustration; it can also occur in the total absence of frustrating circumstances. Even more, frustration not only is not necessarily its precursor, but needs the company of aggressive cues and negative affect, to be a strong facilitator of aggressive behavior; alone it is not (Gustafson,1986). This conceptual misunderstanding has lead to defective educational methods which supposed that if children who are given sufficient love and frustrations are avoided by adopting methods based on total liberty and indulgence, they would not show any aggressivity. The reality shows that children who are educated in this fashion usually are more aggressive because, either they believe they are omnipotent and in consequence demand that any passing whim is immediately satisfied, or they lack any emotional goal or personal satisfactions, needing the aggressive potential to protect and affirm their developing individuality (Miller, 1941; Novaco 1978; Storr, 1968).

b) Al Bandura's **social learning** hypothesis (1973, 1983) placed a greater emphasis on the external, environmental, social context as elicitor of aggression in a push to understand this in terms of cues, responses, stimuli reinforcements and punishments. He describes violence as including a wide range of behaviors based on past experience, that is meaningfully related to the context in which it occurs, and which is maintained because it makes sense to who is behaving violently. In essence, besides the biological factors, he emphasizes the role of direct experience and observational learning in the acquisition, instigation and maintenance of aggressive behavior, in much the same manner as many other forms of social behavior. An individual can learn aggression by observation and imitation of an aggressive model whom one admires [if admired authority figures, such as parents and teachers, hit children then it must be all right to do it], with reinforcement playing a leading role in its development, a fact frequently overlooked in animal studies. Its occurrence is instigated by: influence of models [arousal, attention], aversive treatment [attack, frustration], incentives [money, admiration], instructions [orders], and bizarre beliefs [delusion of paranoia]. Finally, it is regulated -maintained, strengthened, or controlled- by rewards and punishments coming from three sources: 1) self-regulatory mechanisms [pride, guilt], 2) external sources [tangible rewards and negative consequences], and 3) by vicarious experiences, watching an influential role-model engage in an action with positive consequences. The rewarding consequences of aggressive behavior are transmitted to the observer vicariously: who must learn for himself how the response will work for him.

Two topics with rather contradictory findings in the literature are worthy of being commented at this point. One is whether does TV violence engender violent acts by viewers? Whereas many researchers have found this to happen [when children are exposed to aggressive models on TV, the future aggression may be increased by reinforcement of social imitation], according to others the probability of aggression in viewers may also be reduced by its mere observation, if one believes in the notion of catharsis [observing violence may induce a catharsis, leaving their feeling drained, reducing their personal emotion of anger and hostility (Feshbach, 1956). On balance then, while aggressive feelings may be reduced by watching violence, the performance of aggressive acts is likely to be increased.

There are also contradictory findings on the effects of punishment: although the aggressive acts may temporarily cease, the training procedure that is intended to decrease aggression may also eventually increase it, because pain is one instigator of aggression: thus, spanking a child for hitting another child may result in even more hitting (Baenninger, 1994).

c) The **social cognitive** hypothesis (Huesmann, Eron, 1984; Eron, 1990, 1994),even though it accepts the contribution to aggression of biological components which include variable individual differences which can be described as a personality trait [biology participates in it, especially through genetics, hormones and nervous system], it stresses that aggression, as any other social behavior, is controlled by programs learned during early development, through observation, reinforcement and personal experience. These programs are stored in memory during a critical socialization period and used as guides for behavior and social problem solving [once they are retrieved, their appropriateness and the likely consequences are evaluated]. In the case of the aggressive patterns, they are learned very early in life [between 6-8 years] and very efficiently [by age 8, it becomes a stable characteristic], being difficult to unlearn. That may explain why most interventions and rehabilitation programs in adolescence are largely unsuccessful; preventive action must begin during just a brief critical period of developmental years.

d) Len Berkowitz (1989) accepts the considerable value of the frustration and cognition hypothesis, although he criticizes them as incomplete because they fail to give adequate attention respectively to: 1) the important role of other external stimuli in aggression, besides frustration; and 2) automatic associative processes in producing emotional reactions such as anger and aggression, besides the purely cognitive and even rationalistic explanations of emotions -appraisals-attributions-construals- presented by cognitivists as virtually the only determinants. His **cognitive-neoassociationistic** approach (Berkowitz, 1994) stresses the emotional and cognitive links in aggression. Emotional states are best regarded as an associative network linking together feelings, physiological reactions, motor reactions, thoughts and memories. These connections can differ in strength, being often relatively weak. The activation of any one of these components of the network will activate the other ones in proportion to their degree of association. According to his hypothesis, as long as the feeling is intense enough, any negative affect [the unpleasant feelings produced

by an aversive event such as frustration, discomfort, pain], will initially activate at the same time at least two different emotional networks: one dealing with flight (escape-avoidance), and the other involving fight (anger-aggression). A host of genetic, learning and situational factors determine which tendency is dominant at any time. In the case of activating the anger-aggression network, it will promote angry feelings, aggressive inclinations and hostile thoughts and memories, i.e., readiness for aggressive actions, which may turn into irritation and aggressive reactions. Finally these primitive reactions to negative affect which are evoked by an aversive environment, can be restrained or altered by higher order cognitive processes. Emotional behavior, although sometimes impulsive and not subject to cognitive control but affected by involuntary reactions to unpleasant feelings (Zillmann, 1988), can be self-controlled or self-regulated with increased awareness and training constructive or non-aggressive habits in response to provocation.

PLURIFACTORIAL APPROACH

Present computer, cognitive science and neuroscience revolutions aid in a much clearer understanding of the multiple dimensions of aggressive behavior. Against the reductionism of any extreme polarization such as biology vs. social factors, individual self-assertion vs. collective will, intelligence vs. feelings…, the interaction of multiple factors, not necessarily reducible, seems to influence aggressive behavior through an intermingling mechanism which is far from being entirely understood. Aggression is multiple determined. There is a convergence of a number of variables: endogenous conditions, exogenous circumstances and social influences (Ramirez, 1994). Therefore, rather than propose a new and different theoretical framework, we feel more prone toward the study of the phenomenon of aggression from an eclectic approach, with a non-dogmatic attitude exempt of bias and open to any useful and valuable elements offered by the many other different theories previously mentioned.

We all are genetically equipped to be violent. The difference between more or less aggressive people is merely quantitative: although criminals are more likely to be aggressive, "standard" people can also become aggressive when securing vital needs or for defending themselves from threat. But because a given individual has a particular combination of genes, does not imply that he must behave in an aggressive way; only that he is more or less likely to behave in a different way to another individual with a different combination.

It is well to remember that behavior is never inherited as such, but is always developed. Just because an individual possesses a particular combination of genes, it does not follow that the individual must express whatever capacity for violent behavior he has, or even that it must be developed, since factors other than genetics are always involved in development (Scott, 1991; Ramirez, 1994). This dynamic interaction, however, does not occur routinely, even when these factors converge, but according to a certain biological pre-programming, peculiar to the unique history of each individual, also linked to a peculiar socio-cultural influence. Somebody who has been pre-programmed to respond aggressively by the influence of his genetic history and reinforced through prior experience and learning, is

more likely to behave aggressively. A quick temper which somebody could inherit, for example, must have an environment for its expression, and a cultural milieu in which it may or not reach its full potential.

The existence of hereditary components which contribute to a behavior does not mean that that behavior is determined at all. Just because an individual possess a particular gene or combination of genes, it does not follow that the individual must express whatever capacity for violent behavior is developed, nor even that it must be developed, since factors other than genetics are always involved in development. Traits are not inherited themselves but modified and limited by hereditary factors. What comes from the fecundated egg is a series of ontogenetic processes. And these ontogenetic dispositions, with a stronger or weaker genetical 'propensity towards aggression', are modulated and corrected by the influence of environmental factors, especially by learning. The particular forms of behavior depend upon these processes, and never directly upon the genes. However, even if behavior is not biologically determined, the capacity to learn and the constraints or limits on any type of behavior are linked with biology. Therefore, nobody inherits aggression, but genes. The inborn programs or strategies do not themselves create aggressiveness, but only enable one to behave aggressively, through the involvement of motor patterns, releasing and motivating mechanisms, and learning dispositions. Their activation depends upon the appropriate stimuli. Thinking of this in terms of a causal sequence, like Scott (1958, 1991) we could say: genes plus training produce aggressiveness; environmental stimulation plus aggressiveness produces aggression.

The expression of aggressive behavior thus will be a function of the interaction between a series of endogenous conditions and exogenous stimuli, in accordance with the peculiar circumstances of each subject at each moment.

Among the **endogenous conditions,** should be mentioned biological differences, physiological changes and psychical processes:

1) **Biological differences**, including genetic predispositions to behave in certain ways. Different gene pools explain the clear difference in aggressiveness observed between species, strains, sexes…, and even individuals. These characteristics or dispositions [stimulation, seeking, dominance], which usually determine the threshold for activating mechanisms associated with aggression (Moyer, 1976), can be described as personality traits and are peculiar to each subject. Who hasn't heard at one time or another of families or individuals who behave strangely with bizarre anomalies, presumably as a result of being born with 'bad blood'? 25-50% of the aggressive psychopaths show abnormalities in the brain electric rhythms, and 2% have genetic abnormalities in their sexual chromosomes. One of the most interesting characteristics of this abnormality is the indifference of patients towards another's feelings, and towards the truth (Storr, 1968). Recently, clinical and experimental studies, such as an apparent tendency towards aggressive behavior in a number of males in a Dutch family with a documented MAO-A deficiency, and a research of the Pasteur Institute with mice, suggest that a mutation in the chromosome X, precisely in a gene responsible for the codification of the enzyme

monoaminoxidase (MAO) A, also seems to be related with the violent behavior observed in some males, but it is not a common condition: fewer than 1/300 males have a MAO-A deficiency.

2) **Physiological changes** in the neuroendocrine systems, mainly of a chemical character, can also be substrates of aggression.

a) There is a modulation in the continuously changing brain, with a reciprocal and balanced interaction between its different parts, each one with specific functions:
• the autonomic nervous system, responsible for physiological arousal that may lead to aggression, preparing for fight or flight, can also be subject of learning (Miller, 1969);
• the hindbrain, responsible for motor co-ordination [cerebellum] and control of involuntary activities [medulla];
• the midbrain, with practically no connection with anger; and
• the forebrain with a telencephalon [cerebrum] specialized in sensation, problem solving, and voluntary behavior, and a diencephalon in the co-ordination of unconscious processes, including emotions.

The most interesting structure of the diencephalon is the hypothalamus, a motor center controlling and co-ordinating various emotional reactions, and also a center for the propagation of stimulation, which we experience when we feel an emotion. In the telencephalon there is a balance between the neocortex, with a predominant inhibitory character and an important role in controlling and repressing the expression of emotions, and other rather activatory regions such as the limbic system and especially the amygdala (Ramirez, 1990, 1991). If the activatory portion, stimulated by outside events, overcomes the inhibitory one, aggressive symptoms appear, and stimulation is also sent back to the cortex, as a feeling of anger. There are hereditary differences in this balance, accounting for the contrast between quick-tempered and placid people. Not having yet a sufficient understanding of these neural mechanisms, we have to limit ourselves to a theoretical appreciation of its integrative function of filtering external stimuli, interpreting these signals and electing from available responses (Bernstein, 1991).

b) Hormones maintain the neural balance between activation and inhibition. Although studies must be dealt with cautiously given their inconclusiveness, they suggest some indirect bi-directional relationship between hormones and aggression:
• Androgens and adrenal activity appear to potentiate aggression, and this may elevate hormonal levels, as shown in primates (Bernstein, Rose, Gordon, Grady,1979). There is no evidence, however, but only a mere correlational concurrence that testosterone might be a cause of many of the differences noted in aggressive behavior: in teenagers, angry reactivity to an insult appears to be substantially correlated with testosterone levels (Olweus, 1984), but androgen usage in men (by testosterone intake), rather than real increase of aggression, causes expectation and anger proneness (Björkquist, Nygren, Björklund, & Björkquist, 1994). The typical puberal development shows a sharp hormonal increase, mainly in the hypothalamus-gonadal and the hypothalamus-adrenal systems, which coincides largely in time with the emergence of serious fighting [there is a clear cut

difference, not only in the topography and behavioral characteristics but also in the timing, with play fighting which occurs earlier in life and its practical disappearance with the onset of adulthood (Onyekwere, Ramirez, 1993 a,b, 1994)]. This helps to understand the difficulties of male adolescents who get in trouble with each other as they adjust to their adult level of testosterone. This coincidence also explains the inextricable link between aggressive and sexual behavior.
• The low levels of progesterone also seem to produce irritable aggression, as described in the pre-menstrual syndrome: some women show a rise of violence during the week prior to menstruation, and such symptoms are often alleviated by supplemental progesterone (Dalton, 1964).

c) Other organismic changes, such as biorhythms and homeostatic signals.

3) **Psychological processes**:

a) Frustration, suffering, threat, hatred, fear and other subjective feelings and experiences, as well as different facets of cognition, such as expectations, appraisal, and speech in the human case, may induce aggressive emotions and actions. Aggressive behavior is often interpreted as an assertive way of coping with life's difficulties.

b) Early social experiences and learning, among other biographical and cultural influences, seem to have a strong influence on the frequency and form of expression of future behavior. The significance of prior experience within a social organisation, for example, has been clearly shown (Rosvold, Mirsky, Pribram, 1954): behavior, far from being indiscriminate, varies according to the social hierarchy and other personal experiences and circumstances of each particular animal. Success undoubtedly increases the likelihood of future aggressive behavior, and failure decreases it. Previous experiences as well as learning by imitation have a decisive influence on social relationships especially during the socialisation process, constituting a possible positive inhibition of negative behavioral tendencies. But, although some researchers (Bandura, 1983; Scott, 1958) think that one has to learn how to behave aggressively, that an unprovoked attack can only be produced by training, research with animals and people indicates that this is not necessary for aggression to occur (Berkowitz, 1994; Eibl-Eibesfeldt, 1979; Ramírez, 1979).

We should never forget, however, that all psychological processes act, and are stored and confronted with new information in brain structures, uniquely arranged for each living being. Our biology forces humans for instance to acquire culture -language, beliefs, habits- by virtue of the intricate processes taking place in our central nervous system, where emotions -such as love, hate, pleasure… and aggression-, thoughts, words, concepts, and philosophies are generated. The nervous system is thus always necessary for any action, including aggression.

But these brain structures, hormonal levels and other psychobiological conditions alone only demonstrate potentialities for aggression. Its elicitation needs these endogenous mechanisms to be triggered by some **exogenous stimuli**.

Which are the more relevant exogenous variables leading to aggressive behavior, given the adequate endogenous circumstances for it?

1) **Situational contingencies**, such as: a) territoriality; b) atmospheric factors, such as heat [although heat in itself is not sufficient to elicit anger, it is a convenient element to induce an irritable state; it explains that the rate of rape and other violent assaults rise with the temperature during the Summer months, and the homicides in U.S.A. are higher in the hotter regions of the country (Anderson, 1989)], atmospheric pressure, winds [sirocco favors apathy, and foehn excitability and aggressivity], and other seasonal changes (Ramirez, 1978); c) unpleasant events [foul odors, pain, blows, loud noises or pollution]; d) dietary factors [alcohol and hypoglycemia, for example, have been found to increase irritability in some studies (Andrade, Benton, Brain, Ramírez, & Walmsley (1988)]; and e) any other external stimuli [drugs].

2) **Social conflicts**, such as: a) social isolation [lack of the necessary social stimulation -for example, the exclusion from the group- produces either extremely aggressive individuals, or passive and apathetic ones, and prevents one facing eventual social irritations successfully]; b) spatial restriction [crowding] which response may differ according to sexual condition; c) disputes over scarce resources [shelter, food or sexual mates]; d) presence of strangers; and e) any other kind of social disorganization [for example hierarchical disputes over one's position].

How do all those different factors interact?

According to Kuo's theory of behavioral potentialities (1967), genetics provides enormous possibilities for behavioral development; and during ontogeny, especially during the so called 'critical periods' for development, there is a crucial adaptive selection with an enormous influence of experience. Its flexibility however will depend on the reservoir of phylogenetically determined behavioral potentials. Although there are contradictory opinions about to what extent these are determined by phylogenetic adaptation, it could be expected that the more highly developed the organism, the greater the flexibility, with a maximal ontogenetic adaptability reached in humans.

The complex network of causal stimuli may work in the following way: "Fighting may start with a sensation of pain when the fighter is attacked by another individual. He may have been previously excited by the sight of the attacker, and his behavior may be modified by this outside experience. The stimuli are carried to the brain, where a feeling of anger results, according to Cannon theory of emotions. This feeling may be one of the things which causes the outward fighting reaction, but in many cases the voluntary reaction may occur so quickly that the feeling arises later and only serves to prolong the reaction. At the same time the hypothalamus passes its stimulation down through the sympathetic nerves to the visceral organs. A little later cortisone may be produced, leading to other sensations throughout the body. These sensations are probably of minor importance as direct causes of fighting, but they still may affect it through learning processes" (Scott, 1958, p.62). The internal physiological mechanism, which can be easily triggered by threat or frustration,

can also be kept under control by external means. Once it is stimulated, the psychological mechanism leads to subjective feelings of anger and physical changes which include stereotypical emotional responses such as: higher pulsations and peripheric blood pressure, hyperglycemia, hyperpnea, muscular contraction, piloerection, higher threshold in the sensorial perception [one may resist very painful lesions, without being aware of them]… This physiological state may be maintained for hours, and even become chronic, resulting in actual tissue damage and disease.

FUNCTIONS OF AGGRESSION

The omnipresence of aggression, nearly universal among species, suggests a fundamental biological function. What is the functional significance of the infliction of harm, the main characteristic of aggression?

In opposition to those who present **aggression** as an absolutely undesirable, destructive attribute that should always be controlled and replaced by an alternative behavior, we may assume that it **is not always necessarily negative**. "Aggressivity is not necessarily destructive. It proceeds from an innate tendency to build and dominate the life, and it is a characteristic of all living matter" (Thompson, 1964). Besides its destructive force, it has a positive facet as well: "it is the basis of the intellectual realization, of the achievement of independence, and even self-esteem which permits man to maintain his head high among his conspecifics" (Storr 1968). Without the aggressive and active part of his nature, man would still be even less able to direct the course of his life or to influence the world in which he is surrounded. A total lack of aggression may make social living impossible, and, on the contrary, the disagreement, the controversy and even the competitive struggle includes a positive function, generally ignored by contemporary psychology.

Even if aggression is an inherited constant from which we cannot be freed, an impulse as innate and powerfull as one's sexuality or hunger, it does not mean that it has no positive facets. Charles Darwin (1859), talking on biological selection, already claimed this **beneficial function** which is useful for the preservation of the individual and of the species. Aggression influences: a) struggle for life enabling an animal to compete with its conspecifics for basic needs; b) sexual selection; c) defense of the offspring; d) creation of a social order as guardians of the group, with important advantages like the ones mentioned when we talked of dominance hierarchies: f. ex. in baboons, “dominance leads to peace, order and estimation of the community” (Washburn, DeVore, 1961).

Konrad Lorenz (1963) insisted that the aggressive instinct can be understood as having evolved in the service of a number of important positive functions for the preservation of the species, such as: a) dispersion of individuals, ensuring maximal utilization of available food resources; b) helping to strengthen the genetic makeup of the species by guaranteeing that only the fittest reproduce; and c) protection and assurance of the survival of their offspring.

Aggression thus is a mixture of various forms of behavior which may be useful for very different functions: territorial, dominance, sexual, parental [defence and discipline of the

young, weaning], and interspecífic [antipredatory defense]. Although each of these functions has evolved independently in different control centres of the nervous system, some of them can coexist, f.ex. in crothalos, a genus of American serpents containing the typical rattlesnakes (Wilson, 1975).

Although aggression may be a way of achieving aims in life, usually it is only a wasteful and harmful means towards the attainment of a goal with serious limitations, such as the danger of hostility against non-known members of the same kinship, and a kind of waste of a time which could be better invested by dedicating it to something else more rewarding (Wilson, 1975). It becomes **only "a last resort"** for the adjustment of conflicting interests, because, generally speaking, intelligent cooperation offers better solutions for their satisfaction and the reaching of the same goals. Only animals with a narrowly limited power of cooperation remain aggressive. "The reason why animals fight is that they are too stupid to make peace" (Craig, 1921). Human intelligence, given its increasingly efficient coding systems, enables us to choose between alternative means of attaining goals, and to consider aggressivity and hostility as only some among those intelligent alternatives, and usually not the best ones. When a person resorts to aggression as a way of achieving his goals in life, it is a dangerous matter for the rest of the population: one who gets one's way by hitting, punching and screaming in the childhood, is learning to behave aggressively and is likely to carry the results of such learning in the adulthood still being aggressive. The use of the intelligence thus leads to a general decline of violence, with control of non adaptive aggression and cooperation in adaptive aggression. The destructive power of uncontrolled aggression can also be compensated for by other positive alternatives.

Animal studies however inform us that its use 'as a last resort' may have an **adaptive function in some circumstances**. For example, we may teach a dog to defend our property from strangers, or encourage a child to defend himself when attacked by a same size peer, or give help to a victim under attack. In humans, there are also some social environments which motivate violent behavior, in interplay with personality factors, such as the motives formulated by Toch (1984): a) reputation defending; b) norm enforcing; c) self-image compensating; d) self-defending; e) pressure removing; f) bullying; g) exploitation; h) self-indulging; and i) catharsis. In sum, aggression is only one of the methods humans have evolved for dealing with conflict, even if usually there are other better choices, like flight and reconciliation, cognitive or social deficiencies may lower our threshold for aggression (Salter, Schiefenhövel, & Burenhult, 1994).

CONTROL AND PREVENTION

Although considerable research on aggression has been stimulated by an effort to apply knowledge directly to the prevention of violence, and even if "the time is now ripe for social scientists to apply the results of our studies to real life problems of violence" (Feldman, 1982), in my own opinion the management of violence in everyday life is still relatively untouched.

Presenting aggression as being something innate or instinctive does not imply that it had to be something unavoidable, something to be necessarily elicited. This merely means that

animals are equipped with neural and humoral apparatuses for particular fixed action patterns, and that these action patterns can be elicited by appropriate stimuli such as an instinct. Aggression is merely a potential which one does not necessarily have to apply.We need not accept aggression as a fate: “we shall not improve our chances of counteracting [intra-specific aggression] if we accept it as something metaphysical and inevitable, but on the other hand, we shall perhaps succeed in finding remedies if we investigate the chain of its natural causation” (Lorenz, 1963).

If **aggressiveness is controllable**, how does one control and prevent it? “Its internal physiological mechanism can be maintained under control by external means” (Scott, 1990) by: a) **reducing** the level of **unpleasant** life **events** which may elicit it, i.e., its causing factors [f.ex., avoiding its expression by those who are already motivated for doing violent acts]; and b) **avoiding its destructiveness**, i.e. fostering collaboration and communication between one another, through territoriality and inhibitory mechanisms, such as conventionalities and species-specific rites.

The direct fight for food has been substituted by the conventional competition for territory. Territoriality distributes the habitable space between individuals so that each one can participate adequately in the available resources. If these distances are reduced, aggressive impulses can arise, in a way similar to what is called 'repressed aggression' in humans (Wynne-Edwards, 1962). Animals which live in herds, although they also maintain strictly regulated distances, are less aggressive but they also show less personal links. Monkeys in social group display well-developed mechanisms serving to reconcile group members after a moment of conflict (Bernstein, 1991).

Ritualized encounters, such as mere threat ceremonies or tournaments, appeasement gestures showing submission and recognition of the victory of the adversary, f.ex. laying aside threatening weapons [beak, teeth, claws, horns] and displaying specially vulnerable parts of their own anatomy [abdomen, genitals, jugular; in the human case, bowing or hand giving], avoid killing and serious injury in conspecifics. These ritual gestures are fundamental in what is called 'vinculant' or binding behavior, which reorients aggressivity toward hostile neighbours, through peace making ceremonies which allow the recognition of the other as a friend [food or drink would be shared] (Lorenz, 1964).

In the human case, hostility can be reduced by: a) fomenting the expression of the more constructive aspects of the aggressive impulse; b) reducing its destructive, paranoid elements, i.e., avoiding that aggressiveness may turn to hatred; “only when there is an intense aggressiveness can love appear” (Storr, 1968); and c) **rationality**: whereas in animals built in inhibitions impede them from killing conspecifics, man is the only species who, lacking them, has to create those inhibitions by using his reason [in self-reflection] and social rules (Tinbergen, 1951). Although aggressive behavior can be affected by involuntary reactions, it can be controlled with the increased awareness of higher order cognitive processes.

An adequate way of dealing with some forms of real-life violence on an individual basis could be the application of a clinical approach [anger-management methods] to violence prevention: the cognitive restructuring of a violent person’s perception of social events, and

their relationship with others, can help in reducing aggressivity and hostility. Haecker (1971) also suggests the institutional rationalization and ritualization of aggression, transforming free aggression into masked, invisible and unconscious aggression [internal institutions: conscience, character; external institutions: plays, rulers, norms, groups, organizations], which would be manifested only in very precise circumstances in the name of a superior legitimacy, such as duty, necessity or self-defense.

It would be utopian to think that the mere application of our psychological, biological or ethological knowledge on aggression could have an immediate favorable effect on human social conduct, and on improving the problems of humanity. To thwart the occurrence of aggression often requires that the triggering factors disappear, and this is a problem that transcends psychobiology (nutrition, drugs, neurotransmitters) and enters into other spheres, such as political, social, economical, cultural…, which often leads to the contradiction between political solutions and scientific proposals; and abuse in control, with the old dilemma: Quis custodiet custodes?, who should be whose custodian?

Although different scientific disciplines, each one with its specific methods and a specific classification, deal with aggression, this can be observed on different levels, as being a certain continuum between them. This suggests the convenience of an **interdisciplinary** approach (Groebel, 1990): a) an intraindividual level: processes within the individual [biochemical reaction or cognitive process which lead to an aggressive intention]; measures: biochemical and physiological methods (biology, medicine, psychology), questionnaires (psychology); b) an interindividual level: a social interaction between single individuals; measures: observational (anthropology, ethology), interviews, attitude scales (social psychology); c) an intrasocietal level: conflict between groups within a social system; measures: observational (anthropology, ethology, criminology, empirical sociology), content analysis of media reports (communication science), propaganda (linguistics), theoretical analyses (sociology); d) an intersocial level: hostile conflict and war between different societies; measures: observational, computer simulation (sociology, political sciences), source analysis (historical science), theoretical literature analyses (philosophy).

As a positive last thought, the way we ultimately consider human nature and the increase in knowledge about ourselves, must necessarily influence our own destiny, hopefully for the better.

CONCLUSION

• Aggression is not a unitary concept, but an omnibus term with plenty of meanings which may be distinguished on functional, motivational and physiological grounds, or even according to the context in which it occurs.

• Aggression has multifactorial causes: it is composed of inextricably intertwined innate elements, environmental factors and learning.

• An interdisciplinary approach is needed for the analysis of aggression: although different scientific disciplines, each one with its specific methods, deal with aggression, since it can be observed on different levels, one can assume a certain continuum between the different disciplines, suggesting an interdisciplinary approach.

• Aggression is not absolutely negative and destructive: it can also have positive psychobiological functions for the individual and for the species. It may even be a powerful force molding society.

• Aggression is only one of many possible competitive techniques for disputes over common resources, such as food and shelter, or limiting needs. It can be used 'as a last resort', but usually there are better alternatives. Against those extremist and pessimistic views of animals and people as inevitably aggressive, our message is clear: we do not have to be necessarily aggressive; it can be controlled.

• Even accepting aggression as an instinct, it is not a universal force of an organism. Other socially constructive behaviors which lead to mutual help [altruism], such as the sociability and disposition to cooperate, have likewise evolved and are as innate, natural and deep rooted as aggressivity could be. Even more, according to Richard Leakey (1982), altruism and cooperation are prior to competition in the evolutive history.

• The fact that one possesses the capacity to be aggressive [presumably in part determined by heredity] does not imply that one must be aggressive and make war; consequently there is a real possibility of creating a peaceful world, however difficult the process may be. The conclusion is clear and precise: there are solutions and biological alternatives to aggression and violence, as the Seville Statement of Violence proclaimed. This fact gives one hope.

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* Freud wrote it in 1915, but it was published in 1946, once he was dead

3.

Towards Control and Eventual Prevention of Any Violence: Comments on Dr. Ramirez's Paper

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Abstract: In spite of our agreement with Dr.Ramirez's presentation as a whole, several minor questions were raised and some comments were made about those points. Among others, it was pointed out that his definition unusually failed to refer to' intent' to injure the target. In this connection, It was proposed that investigation into the stage of decision-making in the actualization of aggression might be essential in order to consider strategies to prevent violence.

There happen unfortunately as always hosts of incidents in the world caused presumably by human aggression: from the home violence, through bullying by school children and homicides in the society, to international conflicts. All researches done concerning the aggression, whether they are in animals or in human, aim eventually at overcoming, controlling, and preventing the destructive aggression.

We had invited Dr. Ramirez to present his original article at our Department on the occasion of his visit to Hiroshima in order to participate in the 45th Pugwash Conference that was held there in July 1995. In his article he reviewed systematically different perspectives about causes of aggression, concluding with a reference to the adequacy of multifactorial or eclectic (practical) approach to the causes of aggression, then analyzed the positive functions of aggression in detail, and finally suggested the grounds for biological evitability of aggression and the possibility of an interdisciplinary approach to its control and its prevention and the construction thereby of the world of everlasting peace.

Although we are in agreement with his presentation as a whole, we would like, in the present comment, to put some questions to Dr. Ramirez, making some comments on his descriptions. The order of our remarks follows that of the description in the original article.

First, with regard to the definition of aggerssion, it appears problematic that his definition does not include the intent on the side of aggressor, notwithstanding that those by many researchers or writers do. For example, Berkowitz (1993) defines aggression as "any form of behavior that is intended to injure someone physically or psychologically" (p.3) By contrast, Dr. Ramirez defines aggressive be. h$ivior both simply and objectively enough as "the delivery of any form of definite and observable harm-giving behavior towards any target " , referring neither to causation nor to intent. Although we might be able to interpret the term "definite" as implicitly referring to "intended", and we can understand that in case of animals the anthropomorphic expression like intent may not be permissible, it is still questionable for him to exclude intent or the equivalent of it from aggressive behavior. At

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least in humans, on the one hand, incidental or unintentional harm-giving behavior, however harmful it may actually be, should be excluded from aggressive behavior, while intended harm-giving behavior ending in failure should, on the contrary, be included in aggression; In animals, on the other hand, at least instrumental aggression learned on the basis of innate drive of aggression may be controlled by an intent like motive, as could be inferred from observations. Thus, according to Baenninger (1994), again, (human) aggression is a physical or verbal behavior that is intended to injure or destroy.

Archer & Browne (1989) give three features relevant for categorizing an act as one of aggression: anger, injurions behavior, and intent. "Intent is often seen as the crucial defining feature and, (...) it has led to many problems… In practice, we have to rely on verbal statements, inferences from actions and contextual cues, to infer about intent." (p.5) Berkowitz (1990, 1994) also emphasizes that the provocation of unpleasant feelings leading to anger is an essential antecedent condition of aggression, although he, as well as Dr. Ramirez, does not refer to anger in his definition of aggerssion; only, the latter mentions on page 29 the involvement of anger in the course of actualization of aggressive behavior, in citing Scott (1958).

Second, concerning the conception of learning, Dr. Ramirez, by citing Barnett (1963), observes that "the term 'learning' is beginning to be considered as too loose, general and imprecise to be useful to any rigorous description of behavior" (p.22). Yes, indeed, there have been issues about how many types of learning should be identified: from Thorndike's, or Hilgard and Marquis's dichotomy to Gagne's system classifying learming into eight forms. Also the dichotomy of nature and nurture is an arbitrary one. But, conceptually, the learning may have a definite meaning, and, accordingly, the nature and the nurture are distinguishable from cach other. Moreover, Dr. Ramirez himself uses the term (early) learning as one of the environmental factors of aggressiveness (p.27) and of the psychological processes constituting endogeneous conditions of aggression (p.29).

Third, concerning the effect of viewing violence in TV on aggressiveness in children, Dr. Ramirez, perhaps based on Baenninger (1994), concludes that "while aggressive feelings may be reduced by watching violence, the performance of aggressive acts is likely to be increased" (p.26). Is this actually possible in one and the same child, even if it might be possible in a statistical sense, that is, in respect to separate children? The reduction in aggressive feelings through watching violence may be caused by catharsis in some children; that must be enduring for a certain period, during which the performance of aggressive acts must also be reduced, in these children, due to the heightened stimulus threshold for such acts.

Fourth, Dr. Ramirez observes that the most interesting structure of the diencephalon involved in emotion is the hypothalamus (p.28; Ramirez et al.,1980) Some Japanese neuroscientists also contributed to the investigation into the role of the hypothalamus as one of the structures involved in aggression: Nakao & Maki (1958) reported that the electrical stimulation of the exterior hypothalamus of cats led to a clear-cut aggressive behavior towards rats; Yasukochi (1960) showed in the cat that the stimulation of the anterior nucleus elicited fear reaction, that of middle part aggressive behavior, while that of posterior part curiosity and warning reactions. Considering, on the basis of, say, the limbic

system theory of emotion (MacLean, 1949) as well as the proposal of Scott (1958) cited by Dr. Ramirez himself (p.29), that no single structure can be said to exclusively control aggressive behavior, it might not be easy to evaluate these findings. Still may we ask what your evaluation is of those findings, in the light of the current physiological theory of emotion which assumes that the hypothalamus is the central organ integrating emotional behaviors, with the aggression encompassed?

Fifth, after discussing the relationship between the activity of sex hormones and aggressiveness, Dr. Ramirez suggested "the inextricable link between aggressive and sexual behavior" (p. 29). By contrast, Ohbuchi (1990) challenged the concept of unique connection between sex and aggression, on the basis of his review of recent researches on the effects of sexual arousal on aggression, induced by sexual portrayals such as erotic pictures, films, audiotapes, or stories. Of course, there is a Iarge gap between these two research methods: One deals with developmental conditions of sex hormones. whereas the other with situational conditions produced by means of psychoiogical stimulation. Still, is the following question irrelevant? "What is your interpretation of these apparently contradictory findings?"

Sixth, Dr. Ramirez states on page 29 that "our biology forces humans for instance to acquire culture-language, beliefs, habits- by virtue of the intricate processes taking place in our nervous system, where..." (italic by the present writer). We wonder what he means by that statement.

Seventh, it is clear from our daily experience that at a certain stage of voluntary expression of aggression there is a cognitive process of decision-making, like in any other kinds of human behavior. This aspect will be related to the control and prevention of aggressive behavior in which we are interested, and hence must be specially important for us. No specialists of aggression, however, seem to explicitly refer to this process with regard to the actualization of aggressive behavior, although implicitly they refer to it in the form of reason or rationality. Perhaps this process may be included in the psychological processes as Dr. Ramirez terms it in considering endogeneous conditions of aggression. He also concludes that "aggression is only one of many possible competitive techniques for disputes over common resources... It can used as la last resort..." (p.33) We believe that in order to construct a theory of control and prevention of destructive aggression, it is well to posit this process, as a definite object of investigation. in the course of actualization of aggressive behavior. What is your response to proposition?

Any way, we must make every attempt towards the control and eventual prevention of any violence-from active and explicit to passive and implicit ones, as well as from home violence, through interpersonal (for example, bullying among school children, rapes), intrasocietal violence, to intersocietal or international conflict and war (for a recent discussion, see Salzen, 1996). For these purposes, since the factors involved as well as the dimensions of life of people concerned are manifold, an interdisciplinary approach (Scherer et 61.,1975) should inevitably be needed, as Dr Ramirez emphasizes.

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4.

FOR THE VICTIM, WHETHER AGGRESSION IS INTENDED OR NOT DOESN'T REALLY MATTER … AND OTHER MATTERS. REPLY TO Dr. HABU'S COMMENTS*

J. Martin Ramirez

It is a challenging and rewarding experience to receive and respond to comments and criticisms from one's peers in open form. Thus, I personally thank *The Hiroshima Forum for Psychology* , and especially Prof. Habu, for their efforts in making possible this vehicle of discussion and debate on controversial subjects, and giving me the opportunity to clarify someb conceptions concerning my main scientific field of interest which has occupied me for a quarter of a century, namely research on aggression. Dr. Habu raises a number of important issues. I shall answer all the questions raised by my colleage, even if perhaps in more a sketchy form than may be wanted, obligued by the obvious limitations of space.

One of his primary theses is to question my discrepancy with most researchers who include 'intent' as a crucial feature in their definitions of 'aggression'. The decission of excluding the 'intent' of the aggressor in my working notion of aggressive *behavior* -I stress the word 'behavior'- is rather a question of convenience, because its inclusion has unnecessarily led to many practical problems, as recognized already by Archer & Browne (1989).

The fact that our operative description of aggressive behavior, an overt action, does not refer to 'intent' to injure the target, does not mean at all that we don't value it as a possible 'crucial feature' of aggression, nor that we deny its possible participation in its triggering as part of a cognitive process which can underly the aggressive actions. But just that when dealing with a working notion of an overt action, it seems prudent to exclude any subjective attribution of possible motives or intentions non directly observable in the subject, given the paramount difficulties of its empirical testing. Abstract concepts such as intention, are very difficult to measure.

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Assuming the importance of the knowledge of how intention can participate in aggression, it is convenient to identify previously its existence. And this will be better achieved by means of an empirical criterium which will allow one to observe those behavioral patterns which manifest such theoretical intentionality. This descriptive approach has to be as aseptic as possible, with operative definitions limited to the consideration of the behavior observed by the individual. Once the structural characteristics of the aggressive behavior have been made explicit by a careful working description, only then can the observer interprete and define its eventual functions and the nature of the cognitive process underlying the actions.

Thus what do we observe? An aggressive behavior directed towards causing harm to others in very diverse ways (Hinde, 1996). We observe it in the victim, textually defined by the Oxford Dictionary as "a person who is injured or killed by another or as the result of an occurrence, *victims of the earthquake"*. If a victim believes himself as being subjected to threat or attack, it doesn't really matter (in terms of the consequences to that individual) whether the behavior is intended or not. I am sure the victims of the recent Kobe earthquake or of the typhons which so often 'aggrieve' Japan, feel their bad luck as a real aggression, even if unintended.

The exclusion of the 'intent' also allows an easier operative description of aggressive behavior applicable to animals and even to inanimate things, and thus is not exclusive to humans. Inanimate things have obviously no intention. And animal intentions are rather difficult to know from outside. But even humans can show "incidental or unintentional harm-giving behavior". The 'instrumental aggression' is a good example of how you can aggrieve somebody else without being necessarily angry; far from being aimed at 'intent to hurt', it is merely a technique to get some reward. Habu prefers to exclude it from the concept of aggressive behavior. It is question of terminology: where to put the border. I, however, am not convinced by him.

A second facet is Dr. Habu's concern about how usefull or less I find learning for controlling aggression, and its implications on the nature-nurture dicotomy. How can there be any doubt about the importance of learning on behavior for somebody like me, who besides being doctor in Education, is dedicated to teach in a Faculty of Education! Even more, I was lucky enough to study at Stanford University with Al Bandura, whose social learning theory is one of the most accepted explanations of aggressive behavior. Suffice to say here that, for example, one of the most potent environmental inputs is stress, which has particularly dramatic biological effects during key periods of development; consequently, it is important to attend to early environmental stressors in assessing behavioral problems. To reduce violence, therefore, education must be crucial at all levels.

And related to the nature and nurture issue, all I want to stress is that even if in theory both are distinguishable from each other, the praxis shows that sometimes it is very difficult to identify what's due to nature and what's due to nurture. Anyone who understands modern genetics recognizes 'the inextricable tangle' that exists between heredity and environment in the development of organisms. It may be premature to speculate on the relative contribution of specific genes to the normal human behavior; their currently identified relations are merely correlative and do not directly infer cause and effect. It is an unwarranted oversimplification to say that because behavior is a function of biology, and biology is a function of genomic activity, one might naturally conclude that genes drive behavior. Biological differences do not necessarily stem from genetic differences. Environmental inputs give rise to biological changes in nerve cells both in adult and in developing organisms. Such changes can turn genes on or off, altering the levels of neurotransmitters as well as the numbers and kinds of receptors, and so give rise to both immediate and long-term changes in behavior. Each of us comes with a set of genes that start to respond in utero to environmental stimuli; they can be continuously active or lie dormant, awaiting the appropriate environmental signals. Thus we cannot dispel the role of the environment in the development or regulation of behavioral phenotype. Most of the biological and behavioral features are rather a product of their dynamical mutual interaction. The experience of life influences the development of any behavior and the brain, but it needs tools to do so, and these are provided by biology via the genotype.

Third, the study of the effects of watching violence on television on aggressiveness in children, is of paramount importance given the influence of the mass media. Yet although the results obtained on this general topic are still confusing and controversial, there is a broad consensus that exposure to media violence increases children's aggressiveness (Wood, Wong & Chachere, 1991), with a critical period in preadolescent childhood (Centerwall, 1989). We have studied the immediate influence of watching violent and non-violent images on child behavior: the time in solving of co-operative games was shorter in those children who had seen films showing positive social behavior than in the ones involving aggression (Andreu, Medroño, Zamora & Ramirez, 1996). And, although it is not yet clear whether the exposure to media violence could lead later to increased violence in adulthood, in a 22-years prospective study of an age cohort in US, Huesman (1986) has found that boys' television viewing of violence at age 8 significantly predicted the seriousness of the crimes for which they were convited by age 30. He concludes that this long-term effect of media violence on behavior seems to be exerted to a substantial extent through

mediating cognitions which develop early in life and then they become very resistant to change.

Another possible explanation, based on the catharsis theory, is that a person can reduce his aggressive feelings after watching violence in television. But, as Dr. Habu very precisely pointed out, even if both hypothesis [enhancing aggressive acts and reducing aggressive feelings] may be quite plausible, they are never observed simultaneously in the same person, at least if you exclude from the concept of aggressive behavior any 'instrumental or unintentional harm-giving behavior'.

Little has been done in studying the possible relationship between aggressive acts and the individual's proneness to feelings of anger. It would be a further help in increasing our understanding of the concept of aggression. That's one of the aims of our present cross-cultural research: according to our preliminary data, the level of aggression was significantly higher in Japanese students than in Western ones, but no significant differences were found in the level of proneness to anger (Van Goozen, Cohen-Kettenis, Sancho, Fujihara & Ramirez, 1996; see also Fujihara, Kohyama, Tanaka, Andreu & Ramirez, 1996).

Forth. The hypothalamus is one of the most interesting brain structures, coordinating various emotional reactions. It is indeed a pleasant task to play tribute to the already classical findings of the Japanese neuroscientists investigating into its role in aggresive behavior, some of them mentioned by Habu-san. We have also studied it, especially in cats (Ramirez, 1990 a,b,c, 1991; Ramirez et al. 1982, 1983). In humans, several patients with medial hypothalamic tumors have shown increased aggression, and the observation of increasing of aggression in some patients receiving medial hypothalamic surgical lesions for sexual dysfunction also suggest it. We ought to be cautious, however, about admitting the existence of single structures in controlling aggressive behavior because it is difficult to correlate violent behavior with a specific brain region.

Conceptual trends have also shifted with the time. Early animal studies regarding the neural bases of aggresive behavior, began searching for an 'aggression center'. This search failed as it became apparent that many brain regions all modulated aggressive behavior. Then the quest gradually moved into neural circuits, networks and neurochemical systems. Today investigators prefer to explain it in more holistic terms, even if they are still far from drafting a definitive say (Pribram & Ramirez, 1980, 1995). It does not mean that each structure may not have specific behavioral effects, but that they work in an integrated way with the rest of the organism, and not in isolation. When a structure

is failing, other ones try to complement it, taking over to some extent the function of the 'lacking' structure.

Fifth. I am not enough familiar with Obbuchi's comments (1990) challenging the link between aggressive and sexual behaviors [unfortunately my rather limited level of knowledge of Japanese, the language in which his review is written, makes it difficult for me to understand it]. All I can say is that when I flirt with the possibility of a close link between both behaviors, my contention seems to be supported by anatomo-physiological, hormonal and behavioral data:
a) Aggression, sex, feeding and other motivational behaviors show common anatomical bases -one, for example, is the above mentioned hypothalamus- and physiological similarities.
b) Gonadal hormones, basic for sexual behavior, are clasically related to the level of aggression. Yet in humans, studies reporting positive correlations of testosterone levels with aggressive behavior have not been solidly replicated, animal studies have demonstrated a significant role for testosterone in inducing aggressive behavior in males (Olweus, Mattsson, Schalling & Low, 1988). Premenstrual syndrome is also often linked with higher irritability.
c) Daily experience also tells us that it does not seems uncommon to show some behavioral features during sexual courtship which could be interpreted as aggressive; without having to blame sadism for it. Aggression and sexual behavior depend both on coming together.

Sixth. What I meant by saying that "biology forces us to acquire culture", is that all our behavior, even its most unmaterial and 'spiritual' aspects, like language, cognition and beliefs, express themselves through our biological organism, unique not only to each species but to each individual, through the specific biological constrictions and peculiarities of each one. The same 'cultural' environment influences you differently, my most honorable readers, and your pets even if you may share most of the same environments.

Finally, I totally agree with Dr. Habu's proposal of including the process of decision-making as a stage within the general context of psychobiological control and prevention of violence. One ought not forget that this is precisely the main aim of aggression research: its overcoming, or at least the control of aggression and the prevention of violence. We must always have in mind that when dealing with social conflicts, aggression is only one of the many competitive techniques possible in any argument leading to decision-making, and usually it is one of the less adequate choices. Given the futility of violence, we have to learn concrete skills which allow us to think differently about disagreements, and to recognise an expanded range of feelings (Goleman, 1995).

Consequently, our most important challenge would be to transform the attitudes and behavior of the culture of aggression and violence into those more positive solutions of a culture more amenable to peace, which ensure that the conflicts inherent in human relationships be resolved non-violently, based on peacefull methods of problem-solving, conflict resolution and reconciliation. UNESCO is working on such a possibility with its recent initiative under the Culture of Peace Programme. This attitude will teach us to conduct ourselves in the 'opposite' way to what aggressive behavior may suggests, whatever it may be called (there is a lack of an appropriate word for it: development of social bonds, affiliation, altruism, cooperation, peace, or any other kind within the rich repertoire of care-taking or 'anti-aggressive' behavior).

Much scientific brain power has gone into investigating the biology of aggression, and important progress has been made towards that goal, even if researchers have not yet pinned down all its aspects. By comparison, we have to admit that little has been devoted to the biological processes involved in aggression's anti-thesis. But investigators on aggression, far from restricting themselves to the study of the pathological phenomenon of violence, also want to study those of health and to became practitioners of peace, preparing the grounds for an effective pedagogy of peace. In fact, they are aware that even if their own research is not enough to overcome the social problems they try to study, it is essential to correctly counsel those decision-makers who are the ones who really have the resources to formulate the adequated policies that might solve the violence that plague our society.

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II. KINDS OF HUMAN AGGRESSION

5.

TOWARDS A CONCEPTUALIZATION AND CLASSIFICATION OF ANIMAL AGGRESSION*

J. Martin Ramirez

A**BSTRACT**

Aggression is an emotional behavior widely common to animals with a surplus of meanings, ranging from an overt response to an internal state, and it may originate from a variety of causes. Since it is not a unitary concept, this paper is aimed to overview the different concepts of animal aggression and to offer an easy classification of it. The following categories might be distinguished: I. interspecific or predatory aggression, 2. intraspecific or agonistic aggression, and 3. indiscriminate or reactive aggression. In this last group, the following sub categories are described: 3.1. defensive, 3.2. maternal, and 3.3. irritable aggression. There is, however, a considerable overlap between the different behavioral categories and their underlying biological mechanisms.

MEANINGS OF AGGRESSION

Aggression is one of man 's most controversial topics of study. Although people generally seem to be in agreement about what the word ‘aggression’ stands for - at least this behavior is both recognized and understood in common usage of the term (Duncan & Hobson, 1977)-, research workers show much disagreement about its meaning and causes. Much of this disagreement derives from the fact that different authors are talking about different things but calling them by the same name.

The term ‘aggression’ is an *omnibus* label with a surplus of meanings, ranging from an overt response that delivers noxious stimuli to another organism to an internal state such as a personality trait (Hinde, 1974). A broad definition of aggression would include all kinds of self-assertive and go-getting behavior: "aggression is the entire spectrum of assertive, intrusive and attacking behavior" (Daniels, Gilula, & Ochberg, 1970); for instance, the ‘aggressive salesman wanted’ so commonly seen in the newspaper advertisements. In the *Stricto sensu*, aggression used to be defined as any overt behavior intending an aversive effect as a goal either a personal injury -it does not need to be a physical harm; it can be psychological damage, such as verbal hostility, devaluation or degradation- , or a destruction of property. For Berkowitz (1962), "aggression serves only to inflict injury; the intent of being potentially injurious would be its essential aspect". Bandura (1973) suggests that it would be more accurate to differentiate the aggressive action in terms of their functional value, and to assume that the infliction of suffering is, at best, a secondary purpose of the aggression; the aggressor, hurting the victim, produces a variety of desired results that cannot be achieved otherwise; for instance, status-conferring value, to gain control over other people, to secure resources and to force changes in social practice. In a few words, Bandura characterizes ‘aggression’ as an injurious and destructive behavior socially defined as aggressive on the basis of a

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variety of factors, some of which reside in the performer (the injurious and destructive effects) and others in the evaluator (social judgements).

On the other hand, Frederiksen and Peterson (1977) distinguished three concepts of aggression: a) the delivery of some aversive stimulus to another living organism, either actual fighting (attacking or defending themselves) or manifestation of rage, anger and hyperactivity, b) the emission of a topographically relevant response against an inanimate target, and c) the symbolic aggression.

In sum, the term 'aggression' is used so broadly that, even confining the problem to a biological view point, it becomes virtually impossible to formulate a single and comprehensive definition. In order to understand this complex phenomenon, it is thus necessary to consider each dimension or strategy in its conceptualization. Moreover, aggression should be treated separately in humans and in animals, because neither the classification of human aggression is precise nor is there an equivalence between many of the human components of aggression and the animal ones. This paper will be concerned only with animal aggression.

CAUSES OF AGGRESSION

The radical dichotomous nature vs. nurture view does not exist any more as a serious controversy (Ramirez, 1978, 1982). There is agreement among most authors that aggression, like all complex behaviors, is determined by an interwoven complex of genetical and environmental factors which are not easily separable since both sets of influences have a subtle and continuous reciprocal interaction in the determination of these behaviors. In a multifactorial analysis of aggression like the one proposed by Scott (1958), the influence of a wide variety of factors can be distinguished: a) internal factors (genetic pool and physiological systems such as the neuroendocrinal system, the biorhythms and other homeostatic signals), b) environmental factors (sensorial and social stimuli), and c) historical factors (phylogenetical and ontogenetical ones).

The precise relationship between its varying mechanisms and etiologies is still not well understood. In the literature there is still a controversy on the evaluation of the variable manner in which the particular hereditary and environmental factors influence aggression. So, in a nativistic interpretation like the instinct theory of Lorenz (1966), aggression involves an instinctual, self-generating system, almost independent of external stimulations. On the another side, the drive theory (Dollard, Miller, Doob, Mowrer, & Sears, 1939; Feshbach, 1970) places a big importance to the environmental factors and suggests that the frustrating events elicit an aggressive drive which motivates an individual to behave aggressively. And here, we should mention again Bandura's conceptualization on the acquisition, instigation and regulation of the aggressive behavior within the framework of his social learning theory.

It should be emphasized that aggression is not determined genetically. The assumption that aggressiveness is preprogrammed (for instance, Eibl-Eibesfeldt, 1977; Ramirez, 1978) has to be understood just as an innate organization of the strategies or 'plans'; inborn programs involve motor patterns, innate releasing mechanisms, releasers, motivating mechanisms and learning dispositions. However, these programs do not themselves create aggressiveness, but only enable one to behave aggressively. Their activation depends upon appropriate stimulation and inputs from different neural systems, including modulation in the plastic, continually changing nervouS system produced by a variety of internal and external changes, such as hormonal states, emotional backgrounds, type of target available, and previous experience and learning. Success and failure, for instance, will have a strong effect on future aggressive behavior (Scott, 1958).

As an example of how previous experience and specific environments result in different aggressive responses, let me mention two observations made in primates by researches which I have been engaged in. The first was showed by Pribram and colleagues (Rosvoldt, Mirsky, & Pribram, 1954; Pribram, 1970) studying the dominance hierarchy in a colony of eight male rhesus monkeys after bilateral amygdalectomy: minimal differences in the extent of locus of resections was not correlated with large differences in the behavioral results; the disparity in the response might be influenced by the length of preoperative time that the dominance-submissive relationship had existed, and to the 'personality' of each animal. Secondly, Delgado (1967) who by activating the same hypothalamical point of the same subject by electrical stimulation, observed that the hierarchical situation of the animal in the social scale of the colony could govern the selection of the response; the monkey showed submissiveness in the presence of a dominant partener , and on the contrary, aggressiveness when it was in a dominant position.

In sum, aggression is not an inevitable nor an incontrollable behavior, automatically elicited by innated mechanisms. On the contrary, it is a free behavior, depending considerably upon the environment and, of course, upon one's own free decision influenced in a variable manner by particular experiential, environmental and biological factors.

DIFFERENT CATEGORIES OF ANIMAL AGGRESSION

From a biological perspective a unitary concept of aggression seems untenable. It is neither determined by a single source of motivation or an environmental variable nor underlied by the same biological substrates. In the real world, aggressiveness is articulated by different types of behavior, although it is entirely possible that a particular instance of aggression may involve more than one of these types. A number of different behaviors, which are not homogeneous entities, seem, therefore, to be subsumed under the general rubric of aggression. In order to understand conflicting results presented in many research reports on the effects of aggression, it is necessary then to postulate different types of it. Organismic and environmental factors do not influence uniformly the different repertoire of aggressive displays, as it has been observed in many species such as in fishes (Davis, 1975), in fowl (Rajecki, Nerenz, Freedenberg, & McCarthy, 1979) and in mammals (Hinde, 1974).

Although everybody recognizes the existence of different types of aggression, there is a controversy, however, over procedures and standards for classifying the particular responses as aggressive and over which classification system would be the most efficacious.

Therefore, certain 'type' labels used by different writers should not be used as interchangeable index of aggressiveness. Several classifications have been tentatively set up. Let us mention some of them. Bevan, Daves and Levy (1960) divided aggressive behavior into spontaneous and competitive aggression. Valzelli (1967, 1981) relied upon a slightly different bifurcation, distinguishing spontaneous from induced aggression. Van Sommers (1972) divided it into reactive aggression, a primary response to a provocation, and instrumental aggression, conditioned by a reinforcement. In 1968, Moyer attempted to classify the different types of aggressive behavior on the basis of the types of stimuli that elicited an aggressive response, suggesting the following eight classes: predatory, inter-ma1e, fear-induced, irritable, territorial, maternal, instrumental and sexrelated. In a further study (Moyer, 1976), territorial aggression has been discarded because it was not possible to specify the exact underlying physiological mechanism, and because of its complex context-dependent character: this behavior tends to be quite variable depending upon environmental characteristics, population density, sex hormonal states, scarcity of food and other external factors (Bandura, 1973). Therefore, rather than a peculiar kind of

aggression, ‘territorial aggression’ appears to participate in several other kinds. Adams (1979) distinguished it into offense, defense and submission, and Brain (1981) categorized the attack in rodents into social conflict (often limited to males), parental defense (often limited to females), self-defensive behavior, reproduction termination and predatory attack.

Since we have yet only gained a very incomplete understanding of the psychophysiology of the aggressive systems, any attempt of sorting out their behavior can at best be tentative. However, as a working scheme to deal with the problem, I propose the following tentative classification of types, certainly non-mutually exclusive, which intends to simplify in a reasonable way the list of aggressive behaviors mentioned by other authors to the essential categories, allowing a flexible insertion within of them of any other kind dictated by research findings or by new consistently documentable items:

1. **Interspecific aggression**: between members of different species. It is also labeled as predation or hunting behavior.
2. **Intraspecific aggression**: between members of the same species. It is also known as intermale, competitive, agonistic or mate-selection-related aggression. This category would include Moyer's inter-male, sex-related and territorial aggression, and Brain 's social conflict and reproduction termination.
3. **Indiscriminate or reactive aggression** is a response to frustration or threats from any source: changes in living space, food supply, well-being, a source of pain and, if mother , one's infant. Any of these sources can ultimately produce aggression toward members of the same species or of others and even inanimate objects. This type would include Brain's forms of parental and self-defensive behavior and Moyer's categories of maternal, fear-induced and irritable aggression, as well as the critic reaction or defense when escape is not possible, the pain-elicited attack or the schedule-induced attack, by frustration. The following subcategories will be described: 3.1. *defensive reaction*, 3.2. *maternal aggression*, and 3.3. *irritable aggression*.

INTERSPECIFIC AGGRESSION

The interspecific aggression, also known as predation or hunting behavior, is directed away from one's own species. Its main aim, at least in carnivorous animals, seems to be the satisfaction of a physiological need such as hunger when this is in concurrence with the presence of an appropriate object suitable to be eaten. When an animal is a placid vegetarian, like the gorilla, this form of aggression is absent. Though this issue is controversial, some researchers do not include predation as aggressive 'aehavior, but consider it merely as a foodgetting behavior. With regard to this alimentary role, however, it is, I believe, also an interspecific attack, in the sense that it leads to the destruction of the prey; many predators will continue to kill even when satiated. Moreover, in some instances predation is not especially related to hunger satisfaction (Eibl-Eibesfeldt, 1967). So, Karli, in his Presidential address to the 4th ISRA Biannual Meeting (1980), considered the mouse killing behavior mostly as an aversively motivated behavior; in other words, as a kind of ‘intolerant’ behavior toward a strange intruder, that reflects the rat's tendency to avoid unfamiliar objects in familiar surroundings (see also Karli, 1956, 1968, 1976).

In general, both females and males engage in predation, even in human society (McGuinness, 1981). This behavior possesses a stimulus specificity and its features may be influenced by the kind of prey (cats usually kill mice, but never rats) and its size (the difference in the size of the gene seems a critical factor), by hunger (satiety and deprivation change the number of biting attacks in Siamese fighting fish (Baeninger & Kraus, 1981) and by previous experiences (Moyer, 1968). There is a general lack of relevance of a particular environment.

Predation can be distinguished into the following patterns: a) the *attack* related to hunting a prey, elicited by a relative specific stimulus situation - its natural object of prey -, and with two separate components: killing and feeding (Adamec, 1975), and b) the prey's *defense* against the attack, which may be also very aggressive. Away of defense is the freezing or immobility of the prey; though not essential it decreases the probability of attack. Both can be done either individually, like in cats or hedgehogs, or in groups, like in birds, wolves or non-human primates.

The greatest amount of work on predatory attack has been developed in the rat at Karli's Lab (Strasburg), and in the cat at Flynn 's Lab (Yale).

INTRASPECIFIC AGGRESSION

Intraspecific aggression is directed toward one's own species. Since the most potent stimulus to this type of aggression, at least in rodents, seems to be the presence of a strange conspecific male, which may be attacked even in the absence of any apparent provocation on the part of the victim (Blanchard & Blanchard, 1977), it is usually known as ‘intermale aggression’. In most species females are more inclined to withdraw than to fight and males tend to be more aggressive, although there are ex ceptions, like female quinea pigs, which are much more aggressive than males (Floody & Pfaff, 1977). Even in humans, females are more inclined to use appeasement to reduce tension than to escalate it (Frodi, Macauley, & Thome, 1977). This term, however, seems to me too restrictive, not only because the presence of a strange male elicits aggression in females (Ramirez & Blanco, in preparation), but also because this social aggression involves other potent sources of motivating animals to vigorous fighting, such as competition for social rank! for food and water, for choice of a mating partner (Kahn, 1951; Kahn & Kirk, 1968; Levine, Diakow, & Barsel, 1965; Van Kreveld, 1970). Because of that I prefer to call this type of aggression, *competitive* (Valzelli, 1981), agonistic (Scott & Fredericson, 1951; Ramirez & Delius, 1979 a, b), or just with the more general adjective *intraspecific*. The term *agonistic*, derived from a Greek root meaning ‘to struggle’, was defined by Scott and Fredericson (1951) as "behavior which is adaptive in a situation of conflict between two or more members of the same species". It thus considers the various sorts of behaviors that occur during social conflict or competition for resources, and contains the full range of different offensive and defensive activities, from overt attack to threat, submission, passivity or escape. Agonistic behavior is almost universally expressed within organized social systems where continuing two-way interaction takes place between the individuals comprising the systems (Scott, 1977).

Ordinarily it increases with any novel change in the environment, and it is triggered by three basic situations: a) presence" of a stranger of the same species, b) insufficient territory for food gathering (dwindling food supply) and spacing (overcrowding), and c) instability and unpredictability of the environment, such as, an unusual movement or posturing (McGuinness,1981). In this social fighting behavior, the following different patterns can be distinguished:

1) **Offense** or pure aggression that searches and attempts to destroy without provocation on the part of the victim: 1.1. *attack*, when there is a physical contact, and 1.2. *threat*, when there is no physical contact, but only threatening postures, gestures and vocalization.

2) **Defense**, that scares away the source of threat, i.e., if you touch me, I retaliate you; sometimes it may be very aggressive.

3) **Avoidance**, either 3.1. *passive*, such as freezing, an adaptive strategy for remaining undetected or at least less noticeable, or 3.2. *active*, i.e., the escape or flight reactions to remove from the dangerous or threatening situation.

The agonistic patterns, thus, serve as strategies which facilitate (offense) or reduce (defense) the access of the attacking animal to specific target sites; they tend to limit their different attack fragments to certain sites of the body. This tendency to direct potentially tissue-damaging action to specific targets is a feature of within-species fighting (Blanchard & Blanchard, 1981). Another characteristic is the existence of a mutual interdependence of attack and defense, while consisting of very different behaviors and influenced by different variables and brain areas (Ramirez, Nakaya, & Habu, 1980), both have evolved together as a functioning unit in every social species: flight and chasing from such an unit that shows an extremely close relationship of specific defender and attacker behavior; both are consistent in time within individual fights (Blanchard & Blanchard, 1981). Finally, the fighting may be more related to an emotional gratification and frequently does not result in death of the participants, but rather they are harmless ritualized attacks that reduce the chances of serious physical damage (Clemente & Chase, 1973), or even only involve certain manifestations indicative of rage, anger and hyperirritability.

Sex related aggression, i.e., the aggressive responses elicited by the same stimulus which produces sexual responses, has to be included in this category. Since there is very little experimental work about it, it will be only mentioned that a consistent pattern is found which separates males and females nearly exclusively. Whereas females do not exhibit aggression in sexual encounters, this can be common in males of certain primates; they become aggressive to females when these are in estrus (McGuinness, 1981).

A way of analyzing the intraspecific aggression is the direct observation of the agonistic displays and also of some others which might not seem aggressive to the observers, like the "violent song phase" of robins and finches in defending their territory (Lack, 1947). Examples of spontaneous fighting behavior have been described among others, in primates (Bernstein, 1976; Delgado, 1966; Lipp, 1978), in bears (Blanchard, Blanchard, Takahashi, & Suzuki, 1978), in felines (Leyhausen, 1979), in rodents (Adams, 1979; Blanchard & Blanchard, 1977; Brain, 1981; Scott, 1966), in birds (Delius, 1973; Ramirez & Delius, 1979 a; Rajecki, Ivins, & Rein, 1976), and in insects (Breed & Rasmussen, 1980). At the present, our Lab is studying the spontaneous fighting behavior of cats in a colony and its elicitation or modulation by electrical stimulation of certain brain areas (Ramirez, Blanco, Alonso, & Delgado, 1982; Ramirez, Blanco, Colmenares, & Delgado, in press), and we must say that cats have proven to be a disappointing species for intraspecific aggression research, as it seems difficult to induce ‘spontaneous’ combating among them. This fact may explain why most studies on cat aggression have been made on predatory aggression.

In highly stable groups, like a colony, however, fights occur so occasionally that it is much more convenient to examine the development of attacks on intruders (Bernstein, 1964; Blanchard & Blanchard, 1981; Stamps, 1978) or indirectly, by measuring the less disruptive threat and other ritualized displays that replace the attack behavior, i.e., the dominance relationship in a group (Bernstein, 1969, 1970, 1976; Ramirez, 1980; Rosvold, Mirsky & Pribram, 1954; Scott & Fredericson, 1951). Dominance is inferred whenever one individual is able to chastise another with impunity. It also shows a superiority, i.e., a priority of access to an approach situation (water, food, mating, grooming…) or of leaving an avoidance situation (threats, attacks, punishment…) that an individual has over another (Van Kreveld, 1970). The establishment of dominance hierarchies is a highly complex affair whose outcome is not only the control of aggression its reduction and containment, but also the reproductive success in complex social systems; "it seems probable now that the elusive quality of 'dominance' correlates with full social maturity and length of tenure in a social group and not with aggressive potential per se" (Lancaster, 1979, p. 75).

Submissiveness is the "readiness of an individual to surrender or submit following an attack or the threat of attack by an opponent" (Leshner, 1981, p. 310). Its primary determinant is the

previous experience of being attacked, and its responses are a series of ritualized mimicries, vocalizations and other speciesspecific appeasement gestures (Delgado, 1966; Van Kreveld, 1970; Ramirez, 1980) that are singnals of surrender, providing potential mechanisms for avoiding further fighting (Lorenz, 1966; Scott, 1977). Once hierarchy has been achieved within a group, the competitive fighting is to a great extent substituted by a non-competitive social system within which animals can function amicably (Kuo, 1960).

Agonistic behavior can be differentiated from predation and other kinds of hostile behavior on several bases, such as following: a) although their attacks do not always differ , usually both of them show a typically different species-specific topography. Tinbergen (1954), for example, pointed out that deer use their antlers when engaged in conflict with conspecifics, but use their front hooves in defense against predators; b) they have different physiological bases (Ramirez, Nakaya, & Habu, 1980); c) both behaviors are elicited by different stimuli; the interspecific one is elicited by the presence of a prey, and the intraspecific by a strange conspecific; d) they are not determined by a single environment variable or source of motivation, but both differ in functional and motivational senses; e) no relationship has been found between success in intraspecific fighting in dominance encounters and mouse killing in rats (Baenninger, 1970); and f) whereas usually intraspecific attacks involve injury-limiting strategies, i.e., they do not result in death of the conspecifics, and often they are quite harmless; but predatory attacks tend to kill the prey. All these differences explain why it has proven so difficult (Brain & AlMaliki, 1980) to compare the spontaneous social conflicts with the interspecific aggression.

A special kind of aggression which has both characteristics is **infanticide**; in spite of being intraspecific, it finishes killing conspecifics. Killing of young and infant abuse have been observed in numerous species: primates, rodents, insects and fish (Svare, 1977; Svare & Mann, 1981; Galdeman in press). In mice it is a sexually dimorphic behavior; 50% of males tend to exhibit it, but only 5% of females do, which suggests a modulation by differences in sexual hormones. According to Hrdy (1979), this behavior may function to regulate population size, to enhance reproductive success, to optimize the postnatal rearing environment and to provide a food source.

D**EFENSIVE AGGRESSION**

In its purest form, defensive aggression is a kind of indiscriminate reaction displayed as response toward any threatening object. Defense can be shown against conspecifics, against individuals of other species and even toward inanimate objects. Although defense reations have been already described in agonistic encounters, most of them, however, may be observed as part of the aggressive interaction between a predator and its prey, when the latter has no further course for survival but fighting. In these cases, defense does not involve the injury-limiting characteristics of the agonistic behavior and, therefore, it may be a very aggressive behavior, inflicting serious physical damage to the attacker (Adams, 1979).

The stimulus situation eliciting this behavior shows two main components: fear to some threatening agent (Blanchard, Kelley, & Blanchard, 1974) and some degree of confinement. Two acceptations of ‘fear’ can be distinguished: a) the fear state, defined as the motivational state of an individual when its defense or submission motivational systems are activated (Adams, 1980), and b) the fear behavior, defined as a psychophysiological response to immediate or potential perceived danger following a multistage model (Duncan & Hobson, 1977), fear behavior begins with an orienting reaction to a discrepant or novel stimulus, accompanied by an increased arousal, i.e., general readiness to response. In a next stage, this reaction may either become localized and replaced by an adaptive response which tends to reduce the stimulus features which evoked the

initial response or change into avoidance (escape or immobility) or defense, which is the subject we are now talking about. Defense reactions, therefore, have a strong affective component. The second component is some degree of confinement in which the attacked animal is cornered and unable to escape; in other words, the defense reaction is always preceded by escape attempts, if possible, and it takes place only after having exhausted all avoidance strategies (Moyer , 1968).

MATERNAL AGGRESSION

A peculiar kind of defensive behavior is that called ‘maternal aggression’, characteristic of mothers of many species (Hafez, 1962) for purposes of defending their newborn against any potentially or actually threatening agent. A primary trigger to an attack by a lactating female is a threat to her infant. Maternal aggressiveness usually appears during pregnancy, reaches a peak during the first half of the lactation period and is followed by a progressive decrease until its disappearance at the end of it. Most of the studies reported in the literature have been made in rodents (Svare & Gandelman, 1976).

IRRITABLE AGGRESSION

A possible way of classifying the kinds of aggression is on the basis of the stimuli that elicit them and the particular topography of the response. However, when all types of aggression are accounted for, there remains a significant amount of hostile behavior that does not fit into any of these categories. This set of hostile behaviors is referred to as irritable aggression. It is a kind of indiscriminate or reactive response that can be differentiated from other types of aggression by the diversity of the objects to attack; whereas in other kinds the stimulus objects eliciting aggression are relatively specific, irritable aggression may be triggered by practically any stimulus and in the presence of any attackable object. Ulrich 's Lab in Illinois, USA (Ulrich & Azrin, 1962; Azrin, Hutchinson, & Sallery, 1964; Azrin, Hake, & Hutchinson, 1965; Azrin, Hutchinson, & Hake, 1966; Ulrich, Wolfe, & Dulaney, 1969) and ours in Bochum, West Germany (Ramirez, 1982; Ramirez & Delius, 1978, 1979a, submitted) among others have used an extremely broad range of aversive stimuli for eliciting irritable aggression: that is, a physical blow, intense heat, morphine withdrawal, painful shocks, and extinction of a previous reinforcement by food removal (because of that it is also known as ‘schedule induced aggression’). The epitome of this type of aggression is usually described as anger or rage (Moyer, 1968). The observed reaction may be retaliatory or defensive, but it clearly differs from the typically agonistic fight. Because of that, punishment techniques, such as that used in the ‘pain-elicited aggression’, well summarized by Ulrich (1966), are inappropriate for measurement of the intraspecific aggression (Blanchard & Blanchard, 1981). The irritable response is directed toward any attackable target: a conspecific of either sex, a member of other species or even any inanimate object. Unlike the defensive or fear-induced aggression, the irritable one is not preceded by any escape attempt, and the general environment is not relevant to its elicitation. It also has a different physiological origin (Ramirez, Nakaya, & Habu 1980).

CONCLUSION

Aggression is an emotional behavior widely common to animals, including the human species. Since it is not a unitary concept, but has a surplus of meanings, this paper has tried to offer an overview of the different kinds of animal aggression, distinguished on the basis of a variety of factors. The stimulus situations that elicit aggression and the behavioral patterns are so diverse that it appears to involve a variety of biological substrates too, although there is undoubtedly a

considerable overlap between the different behavioral kinds and their underlying neuroendocrine mechanisms. The various aspects of the aggressive repertoire represent a graded sequence of biological tools available for achieving different goals. Our understanding of the interactions among these various classes of aggression should be enhanced as we understand the details of their neural, chemical and endocrine bases.

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6

SOME INCONSISTENCIES BETWEEN BHIS PRESENT BEHAVIORAL AND PREVIOUS PHYSIOLOGICAL ANALYSES OF AGGRESSION*
Comments on Dr. Ramirez's Paper

Akira Shishimi

Dr. Ramirez's paper is an attempt to behaviorally classify aggression, an extremely complex phenomenon, into a small number of categories which are distinct from each other. He proposed there are three major categories (interspecific, intraspecific, and indiscriminate aggression), chiefly based on the differences in objects toward which the animal displays its aggression. Further, indiscriminate aggression is divided into three subcategories (defensive, maternal, and irritable). Intra- and interspecific aggression are displayed toward specific objects (one's own species and other species, respectively), whereas indiscriminate aggression is directed toward anything.

His three categories of aggression seem quite parsimonious in contrast with Moyer's (1976) seven types of aggression (predatory, inter-male, fear-induced, irritable, maternal, instrumental, and sex-related aggression). However, the law of parsimony alone does not seem to verify his behavioral categories, especially indiscriminate aggression. To make this point clearer, let me compare this paper with Ramirez, Nakaya & Habu (1980).

Ramirez et al. (1980) attempted to test a hypothesis that different neural mechanisms are underlying different types of aggression. They chose Moyer's seven types of aggression as a guide and tested the hypothesis in each type through a review of the physiological facts cumulated to date. The hypothesis was mostly supported in inter-male, fear-induced, and irritable aggression, partly in maternal aggression, and less in sex-related and instrumental aggression. In conclusion, they said that "it is evident that the different kinds of aggression result from the activity of different neural systems."

At this point, my question is why fear-induced, irritable, and maternal aggression are grouped into indiscriminate aggression in this paper. Is there any common physiological basis among them? Unfortunately, I could not find any positive evidence for the common physiological basis among them as far as I can see in their previous paper (Ramirez et al., 1980). If Dr. Ramirez maintains his position of trying to understand different kinds of aggression from physiological as well as behavioral standpoint, I think the appropriateness of his behavioral classification must also be supported by physiological evidence.

I hope Dr. Ramirez in his reply will give us the newest information of recent developments in the physiological studies of aggression.

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7.

REPLY TO THE COMMENTS OF Dr. SHISHIMI*

J. Martin Ramirez

I express my appreciation to Dr. Shishimi for his interest in my article and his thoughtful commentaries. I am going to answer his most fundamental criticisms –'the law of parsimony' and the 'indiscriminate aggression'- as well as the question of whether there is any common physiological basis among the several subcategories of 'indiscriminate aggression'.

Dr. Shishimi claims that the five types of animal aggressiveness distinguished by me are parsimonious in contrast with Moyer's seven categories. If I understand the meaning of parsimony correctly, this does not appear to me as so much stinginess, though. Moreover, in deference to simplicity, I wish I had been able to be still more parsimonious in my classification. In fact, as he correctly pointed out, I tried to follow Moyer's categories in a previous paper (Ramirez, Nakaya, & Habu, 1980). A referee who read it, however, commented that it was "too fine a classification, with some categories being physiologically almost known," and suggested "to reorganize the model by reducing the number of types of aggression." I think he was right in his assessment and, therefore, the main project intended in the present paper was "to simplify in a reasonable way the (long and ununanimous) list of aggressive behaviors mentioned by others to the (very) essential categories."

I think there is no doubt about the distinction between interspecific and intraspecific aggression: The *interspecific* one is Moyer's labeled predation, and the *intraspecific* would include Moyer's *inter-male, sex-related* and even -I would add it here- *instrumental* categories. That intermale aggression is intraspecific is obvious. Sex-related aggression is also clearly intraspecific, having in common with sexual behavior a state of increased arousal. His instrumental aggression seems also to fit within the intraspecific one, since it is largely limited to threatening gestures and mimicry to reaffirm and consolidate dominance, as Valzelli (1978,1981) claims. Neither sex-related nor instrumental aggression seems to show any peculiar physiological basis, besides the intraspecific ones, as far as we know.

The remaining Moyer's categories - *fear induced, irritable,* and *maternal* - are arranged by me as subgroups of a major category, replacing the fear induced by *defensive* reaction, though. And here you might raise a disagreement: Do they really fit within indiscriminate aggression? Is this principal kind of aggressiveness an adequate category? If you pay attention to the behavioral topography, you may see displays of intraspecific and of interspecific aggression in all its three subcategories; all of them - defensive, maternal and irritable - are directed toward anything. Their psychological similarity, therefore, seems clear. However, there are also differences among them, as commented in the target paper: For instance, maternal aggression is a specific response observed in a wide variety of lactating mammals as a normal component of parental care, whereas irritable aggression is a hostile unspecific response to environmental irritations performed by any individual

* *Hiroshima Forum for Psychology*, 8, 23-26 (1981).

toward any attackable target. Because of that, I do not intend to force the reader to accept my proposed classification; in case of my three subcategories they would fit better with reality as independent categories than as putting them together in the eventual ‘odds and ends’ of indiscriminate aggression.

I would like to add a short comment on fear induced aggression. Although fear is the principal stimulus to defensive aggression (Blanchard, Kelley, & Blanchard, 1974; Blan. chard, Fukunaga, B1anchard, & Kelley, 1975), it may also be present to varying degrees in other aggressive displays, interacting with any other category: Intraspecific, interspecific, maternal or irritable. This last assessment disagrees with Moyer's opinion according to which irritable aggression involves no fear. On the contrary, it seems to me that a clear identifi. able fear component takes part also in irritable aggression. If this were the case, you could easily understand those commentators who see "no clearcut difference between fear-induced and irritable aggression," as a colleague suggested reading my previous Moyer's inspired paper. This is also why I rather prefer to talk about *defense* instead of fear induced aggression, as a kind of behavior.

The core of Dr. Shishimi's comment is that "the appropriateness of a behavioral classification must also be supported by physiological evidence." My classification would have been better had I provided a physiological approach, too. I agree with his assessment, but plead not guilty. At this stage we are just beginning to understand the physiological nature of the different behaviors, and their psychobiological determinants and mechanisms have not yet been systematically analyzed. Therefore, a clear biological overview is still lacking. Hence, now, when many important questions remain to be answered, a word of caution seems necessary for those intending to sort out from a physiological standpoint the different categories of aggression. But I plead also want of a right solution in the near future.

The favoured criterion for categorizing aggressiveness was a kind of attackable target toward which response was directed to. This purposeful narrow focus to the psychological approach has another reason. In the classical strategy of physiological psychology, the primary concern is centered on the analysis of behavior rather than on the analysis of physiological basis. Physiology offers to us convenient and available experimental variables, but what is really most useful to know is the ob. servation, description and measurement of the eventual psychological changes produced by the different controlled physiological manipulations.

I now turn, with apologies for brevity, from considerations to the more specific question: Is there any common physiological basis among the different subcategories grouped into indiscriminate aggression? There are several structures with behavioral effects common to irritable and defensive aggression, and perhaps even peculiar to them (at least, they have been only observed in them up to now): Anterior cingulate cortex (Eckersdorf, 1981) and ventrobasal thalamus (Valzelli, 1981) are involved in the triggering of both responses, although the possibility of their participation in other kinds of aggression cannot be ruled out. Although from the earliest studies there is a dominant convinction that aggressiveness is mediated by the nervous system, little experi. mental attention has been directed toward the neural substrates of the maternal aggression: All we can say is that the anterior hypothalamus seems involved in its triggering and the amygdaloid complex and the septal nuclei in its inhibition (Blanchard, Blanchard, Lee, & Nakamura, 1979; Fleming, Vaccarino, & Luebke, 1980). It is my guess that it has in common with the other behaviors the general inhibitory effect by the head of the caudate (Hassler & Dieckmann, 1976; Delgado, Delgado, Amerigo, & Grar, 1975), the dorsomedial thalamus (Roberts, 1962), the septal nuclei (Thompson, 1975; Blanchard & Blanchard, 1977) and the basolateral amygdala, as well as the triggering effect of several ventromedial structures, such as the periaqueductal gray matter,

tegmentum (Bandler, Chi, & Flynn, 1972) and hypothalamus (Olivier, 1977; Lipp & Hunsperger, 1978).

At the present day, as our understanding of nervous system involvement advances more and more, so also grows our knowledge on the possible interactions among the different brain areas and, consequently, the question of modulating and modifying systems becomes increasingly complex: The physiological research is not limited, then, to the location of brain areas, but focused rather on their mechanism and interrelationship, as well as on the effect of neurotransmitters and behaviorally significant hormones on neural mechanism. Let us give a quick glance at what we know about the possible neurochemical differences between the different kinds of aggression:

3. **Neurotransmitters**: a) each category of aggression is modulated by multiple transmitter systems: Cholinergic, catecolaminergic, serotoninergic, GABA-ergic… ; b) each neurotransmitter influences multiple behaviors: for instance, the cholinergic system facilitates the agonistic and the predatory behaviors; and c) even among the different types of aggression, each substance may have a different effect: for example, dopamine and norepinephrine inhibits predation and facilitates agonistic behavior, and the widespread notion that serotonin is always inhibitory for aggressiveness does not seem to be consistent (Daruna, 1978; Beleslin Samardzic, & Stefanovic-Denic, 1981; Eichelman, Eldiot, & Barchas, 1981). I know of no specific data on the influence of neurotransmitters on the different subcategories of indiscriminate aggression.
4. **Hormones**: a) androgen level in the blood may be responsible for the determination of its intensity and the gender differences in irritable aggression, whereas pituitary-adrenal hormones do not appear to be involved (Leshner, 1978); b) high estrogen levels reduce fearlike behavior (Gray, 1971; Leshner, 1978; Beach, 1981); and c) substantial evidence supports the idea that the onset of maternal aggression is facilitated by the hormonal events that occur around the time of parturition and inhibited by testosterone; once initiated, this behavior is maintained primarily through the sensory stimulation provided by the youngers and the intruders, therefore, it is afso dependent upon their physiological state (Svare, 1979, 1980; Ruwland, 1981).

In sum, I recognize that an attempt of putting together in a general classification such an extremely complex jigzaw puzzle as the various conceptualizations of aggressiveness is in no way an easy job, specially since at this time we know only a small sample of the pieces. Many important questions on the biology of aggressiveness still remain to be answered, and what we already know are really not so easy phenomena as a simple classification might at first suggest. All I can do, therefore, is to hope that the major types suggested in my tentative categorization - with a willingness about ‘parsimony’ for students' convenience- would help as plausible models for fitting the puzzle pieces together and facilitating abetter understanding of aggressiveness and its control.

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8

AGGRESSION'S TYPOLOGIES*

J. Martin Ramirez & José M. Andreu

ABSTRACT

Far from being a term associated with a single type of behavior, aggression is a multifaceted concept, encompassing a multitude of meanings with different functions and antecedents. Although not all forms of aggression are contemplated in this paper, our purpose is to provide a short summary of much of the research that attempts to distinguish among different kinds of animal and human aggression. We conclude suggesting a new empirical model to be used as a typology of human aggression.

AGGRESSION'S TYPOLOGIES

Although the word 'aggression' is both recognized and understood in the common usage of the term (Duncan & Hobson, 1977), it is used so broadly that it becomes virtually impossible to formulate a single and comprehensive definition. In spite of the enormous literature on the topic, and the continuous effort shown by many scholars dedicated to studying aggression scientifically, there is much disagreement about its precise meaning and causes, with no singular or even preferred definition. The fact is that aggression is often ill defined, and the best contribution of most of the proposed definitions has been as a critique of those proposed by others. Part of the task of understanding this concept would, therefore, be in clarifying its meaning.

Far from being a term describing a singular dimension, 'aggression' consists of several phenomena which may be similar in appearance but have separate genetic and neural control mechanisms, show diverse phenomenological manifestations, have different functions and antecedents, and are instigated by different external circumstances (see, among others, Ramirez, 1996,1998, 2000). It is therefore an *omnibus* term with a surplus of meanings, related to different kinds of behavior subsumed under this general term of aggression. For instance, Mandel, (1959), after observing 9-16 year old boys at a boarding school, listed 2,205 specific aggressive behavior types. Further, an insufficient differentiation with other similar constructs, such as violence, antisocial behavior, or delinquency, makes the task of its definition even harder. As a consequence of this **lack of unidimensionality**, the word 'aggression' shows a large amount of ambiguity.

Since it is not an unitary concept, but rather has a large variety of meanings, it is important to discern their differences and similarities, along with the general principles which may be true for a variety of species. This would allow for the possibility of generalizing to human behavior.

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However, which definition should be chosen? One which simply inflicts harm on others, in a behaviorist approach ["that delivers noxious stimuli to another organism" (Buss, 1961)]? Or one which stresses the intention to harm, and not simply the delivery of harm [a manifest response "aimed at the injury of a target" (Berkowitz, 1989; Dollar et al., 1939; Feshbach, 1964)]? Should we even restrict it to that which exclusively attempts to produce physical injury? Or, on the contrary, may we accept it in the very least and broadest meaning, as "the entire spectrum of assertive, intrusive and attacking behavior" (Daniels, Gibula, Ochberg, 1970), including all kinds of self-assertive and ambitious behavior?

Whenever we approach any topic, and specially when we discuss a phenomenon whose precise meaning remains unclear, the starting point has to be an agreement about a precise **working notion**: what we are looking for, what events precede it, and what kinds of consequences it is likely to have. If we don't establish a clear definition, we run the risk of talking about different phenomena, even if we call them by the same name, falling into many unnecessary potential pitfalls. This is the case with a term like 'aggression', which is difficult to define precisely. We have to get a working notion which would allow for clear operational definitions thus allowing other researchers to replicate the research. Logically, these operational definitions would depend on the specific type of research done given the multiple disciplines involved in the complex study of such an interdisciplinary topic as aggression. We have made previous attempts to provide such definitions (Ramirez & Rañada, 1997, Ramirez, 2000, Reynolds & Andreu, 1999); however, even in these attempts there has not been consensus.

In addition to this conceptual problem, there is the need for a typology or **typologies** of aggression with enough reliability and validity to be used as a psychological construct. But difficulties inherent in defining aggression appear simple in comparison to the difficulty with establishing a classification of such an ambiguous construct. The difficulties arise from the multiple social, cultural, and professional influences concerned with the different proposed typologies of aggression. The many tentative classification systems set up by different authors over the past decades reflect a wide array of paradigms for producing aggressive behavior, and an equally wide array of its targets.

CLASSIFICATIONS OF ANIMAL AGGRESSION

Many classifications of aggression are focused on characteristics common to all the animal kingdom that may also be applied to human species, sometimes in an unjustified way. A classical classification from this perspective was done by Kenneth Moyer (1968), suggesting eight categories, based on an extensive list of eliciting stimuli or environmental circumstances in which aggression may occur: *predatory, inter-male, fear-induced, irritable, sex-related, maternal, instrumental*, and *territorial*. The last category was later discarded (Moyer, 1976) because of the difficulty in defining the exact underlying biological mechanisms and its complex context-dependent character (Ramirez, Nakaya, Habu, 1980).

Martin Ramirez (1981, 1985) proposed another classification of animal aggression with the intention of providing a reasonable, simple and flexible way of listing the essential categories previously mentioned by other authors. Ramirez distinguished between: a) *Interspecific* aggression, b) *Intraspecific* aggression, and c) *Indiscriminate* or *reactive* aggression. Within the latter category, he included the following subtypes: *defensive* reaction, *maternal* aggression, and *irritable* aggression.

Irritable aggression can be differentiated from other categories by the diversity of the objects attacked: it may be directed towards any target, animate or inanimate. And whereas other types of aggressive behavior may be elicited by relatively specific stimuli, irritable responses may be triggered by practically any aversive stimulus, such as intense heat, hunger, and thirst; the general environment thus seems to be irrelevant to its elicitation. The epitome of this kind of aggression is usually described as *anger* or *rage* (Moyer, 1968), and clearly differs from the typical agonistic fight; unlike defensive behavior, it is not preceded by any escape attempt. When extrapolating to humans, Luigi Valzelli (1981) suggested that the expression of a 'bad temper' is a function of the extent to which a person can tolerate irritating stimuli. While the classification proposed by Ramirez (1981) provided a simple and flexible way of categorizing aggression, Shishimi (1981) criticized this attempt as being too parsimonious.

More recently, emphasis has been placed on important distinctions found between *offensive* and *defensive* aggression (Adams, 1979; Blanchard & Blanchard, 1984; Brain, 1981; Pulkkinen, 1987; Ramirez et al, 1987,1988 a,b). Far from being just opposing ends of a continuum (Weinshenken & Siegel, 2002), they are separate entities, each with different situational determinants, emotional and motivational states, behavioral patterns, with specific wound sites, functions, and even specific neuroanatomical and neurochemical substracts.

Later Ramirez (1998, 2000) proposed a new, wider classification emphasizing the differences between offense and defense rather than on aggression between individuals of the same and of different species. The intention was to provide a means of including human aggression, in spite of the unique peculiarities of our species. For example human aggression has many practical issues connected with it such as the danger of tackling a cornered intruder or passing judgment in cases where a murderer was in a highly fearful state at the time of the killing (Blanchard, & Blanchard, 1990). In Ramirez's classification two main kinds of aggression were stressed: a) *Direct* aggression, aggression of a physical character, was divided into three subcategories: *offense*, a type of aggression - overt threats, warnings of imminent attack or actual physical contact- usually observed only among co-specifics; *defense*, a reactive aggressive response against any threatening target; and *indiscriminate* or irritable aggression, also reactive but to an unspecified provocation; and b) *Indirect* aggression, a more subtle type of behavior which includes *dominance* displays and *symbolic* aggression, the latter being typical of the human species. It has been described in monkeys as attempts to assert or achieve dominance not by a test of strength, but by intimidating the opponent solely through use of its rank symbols (Schaller, 1977), and in birds by notable features such as the 'violent song phase' in defending their territory (Lack, 1947).

Another bimodal scheme classified animal aggression as: a) *Affective defense* and b) *Predatory attack*. Originated by ethological observations in felines (Flynn, 1976; Leyhausen, 1979; Ramirez, 1990, 1991), and adapted to other different species (Sandnabba, 1995), Meloy (1988, 1997), Weinshenken and Siegel (2002) have proposed extending its application to humans. However, this can be difficult in our species since both these components of aggression may appear together. In other animals both kinds of displays are not mixed and occur at separate times. The vast majority of the studies in humans have concerned forms of aggression mainly linked with its affective/emotional forms, with little emphasis on predatory-like behavior. This bias likely results from the ease of measuring the former and the infrequent use of the latter.

CLASSIFICATIONS OF HUMAN AGGRESSION

Other proposals are focused almost exclusively on human beings. Much of the research on classifying human aggression is focused on children, and attempts to characterize aggression in a bimodal way. These schemes include multiple variables and dimensions.

One of the oldest dichotomous distinctions between different kinds of human aggression was perhaps that done many years ago by Saul Rosenzweig (1941), who delineated a specific typology of aggressive responses to frustration: a) a *positive/constructive* profile (need-persistence), which is adaptive and prosocial, and b) a *negative/destructive* one (ego-defense), which is maladaptive and antisocial. Recently Friedman and Pumphrey (2002) examined some physiological correlates of this typology, and found that these aggression-frustration categories were associated with distinct autonomic nervous system response patterns.

Another group of typologies focuses on the form that aggression may take. From this approach, two subtypes may be considered (Berkowitz, 1994; Björkqvist, 1994): a) *Physical* aggression, produced by direct body or instrumental contact between the contenders; and b) *Verbal* aggression, produced by language: gossiping, bitching, whispering, spreading vicious rumors, mockery, sarcasm, and using code names. A third subtype might be added: *Gestures or postural* aggression, which may be expressed symbolically or by different facial expressions and body postures. Underwood (2002) labels them *non-verbal* displays: gestures, staring, rolling eyes, tossing hair, ignoring, social exclusion, etc.

Other classifications are based on how aggression is elicited in social interactions. Consider, for instance, the distinction (Björkqvist, 1994; Björkqvist, Lagerspetz, & Kaukiainen, 1992; Buss, 1961, 1971) between direct and indirect aggression: a) *Direct* aggression, which includes those acts produced mainly in a face-to-face confrontation, during a direct social interaction, either physical or verbal (threats-warnings or actual physical contact). And b) *Indirect* aggression, which involves delivering harm circuitously. In indirect aggression, there is no direct contact in the social interaction between two parties, but a third party –another person or an object- may participate. It is also referred to as *social* or as *relational* aggression, when it involves manipulation of social relations or damaging reputation, friendship and social status.

According to many researchers (see: Archer & Lloyds, 2002), this kind of indirect aggression is preferred by women. In a recent book, which is an excellent examination of a much neglected area of evolutionary psychology, Anne Campbell (2002) attempts to demonstrate that women, who are less physically aggressive and less risk-prone than men, must use indirect forms of aggression. Due to their higher parental investment in a given offspring, women must monitor their behavior in order to remain alive and be able to provide the necessary parental care. First described by Feshbach (1969) among children as spreading untrue stories and ostracising another person, it was found that indirect aggression was substantially more common among girls than among boys during the middle childhood years. This finding has since been replicated in other studies in Finland (e.g., Björkqvist et al., 1992a), the USA (Galen and Underwood, 1997), the UK (Tapper and Boulton, unpublished data, 1998), and Australia (Owens, 1996, 2002). Whether there is a similar sex difference in indirect aggression beyond 18 years of age (Bjorkqvist et al., 1992b, 1994) is not clear. People are generally reluctant to admit using such devious ways of hurting another person, and for this reason most studies involving children have used reports by peers. Bjorkqvist et al. (1994) did devise a comparable scale to measure harassment at work, and found two forms of covert aggression among university employees. One, which was termed social manipulation, was used more by women than men. The other, described as rational appearing aggression, was used more by men. It would seem that in organizations such as universities, where direct aggression is likely to be counterproductive, men learn to disguise their methods of inflicting harm so that they can be presented as justifiable criticism. However, subsequent studies involving an adult version of the

measures originally used to study school children (Bjorkqvist et al., 1992a), did not find sex differences among British undergraduates (Archer et al., 1997; Campbell et al.,1997), nor in American young adults (Richardson & Green, 2002). These gender differences thus decline with increasing age, although the kind of aggressive displays differs according to the sex of the subject (Owens, 2002).

Loeber and Schmaling (1985) applied practically the same criteria to antisocial conduct, proposing two types: a) *overt* and b) *covert*. Little and Hawley (2002) also found a high correlation between overt-direct and relational-indirect, even though they preferred to talk about *overt* and *relational* aggression, including direct and indirect aggression as subtypes of them. In fact they identify and differentiate among four primary dimensions of aggression: *overt-direct, relational-indirect, instrumental-offensive*, and *reactive-defensive*. (Little, Brauner, Jones, Nock & Hawley, in press).

These different approaches to aggression –based either on our biological nature or on the social one- are not independent, but rather they overlap one another (e.g., Yudofsky, 1986). For instance, many times the aggressive action is verbal (i.e., criticizing or gossiping about an absent person), but it may also be non verbal (i.e., gestures, ignoring, excluding) or even a physical action (i.e., directed towards one's property or against any other target, either conspecific, or interspecific, or even inanimate objects). This interdependence makes it considerably more difficult to decide which type of aggression belongs to a certain category and not to another one.

In this context, Buss (1961) proposed another dimension, referring to the *direction* of aggression: a) *active* aggression vs. b) *passive* aggression. This same perspective can also distinguish between a) *extra-aggression* (directed outwards), and b) *intra-aggression* (directed inwards), the extreme expression of which is suicide (Friedman & Pumphrey, 2002).

Where all aggression is a deliberate attempt to injure someone, a common dichotomy emerged, in terms of purpose or goal (inferred or otherwise). Depending on whether the primary *intent* was distress or harm, other authors (Aronson, 1992; Bandura, 1973; Feshbach, 1964; Hartup, 1974; Hinde, 1970; Kingsbury, Lambert & Hendrickse, 1997), also distinguished between instrumental and hostile aggression. Even if intention to harm seems to be a necessary feature in any kind of aggression as a proximate goal (Anderson & Bushman, 2002), at the level of ultimate goal there is a clear difference between these two kinds: a) *Instrumental*' aggression is merely a premeditated technique for obtaining a variety of objectives, such as some reward, profit, or advantage for the aggressor (power, money, control and domination, gratification with sex or drugs…), its primary goal being to achieve some form of non-aggressive incentive rather than harming the victim (Berkowitz, 1993; Geen, 1990); aggression thus becomes a tool for obtaining the desired reward, and requires neither provocation nor anger. It focuses on changing environmental contingencies, and provides alternative ways of securing reinforcers from the environment; it may fluctuate over time as environmental reinforcements change (Lansford et al., 2002). Physiologically it is marked by under arousal. b) *Hostile* aggression may be defined as an act that is intended to harm another person. It is primarily oriented toward the infliction of injury on another individual. Its goal is to hurt the victim, and it is driven by anger. This form is also known as *impulsive/expressive/affective* aggression, because it is an angry response to frustration or perceived provocation; it occurs in an impulsive, thoughtless (i.e., unplanned) manner, motivated by anger and aggressiveness, and elicited by a threatening stimulus that evokes fear, anger, and rage. Contrary to instrumental aggression, hostile aggression is psychophysiologically characterized by a marked behavioral and autonomic (sympathetic) overarousal. There have been described several subtypes of hostile aggression, such as: specific *hostility*, pertaining to a specific situation which frustrates aggression in which the victim is often incidental; *harassment*, unprovoked and directed

at a person; *hostile games*; or *defensive* or *reactive aggression*, which is provoked by the action of others.

Many other proposed classifications of human aggression consistently follow this same dichotomy. Examples would include: instrumental and reactive (Cornell at al., 1996) and proactive and reactive (Crick & Dodge, 1996; Dodge & Coie, 1987; Pitkänen/Pulkkinen, 1969). However, they use different terms, with qualitatively different phenomenology and neurobiology, and appearing clearly distinct at the factorial level (Brendgen, Vitaro & Tremblay, 2002): a) on one hand, the '*instrumental-controlled-proactive-cold blooded-offensive-predatory*' type; and b) on the other hand, the '*hostile-impulsive-reactive-hot blooded-defensive-affective*' one. Recent studies (Lansford et al., 2002; Poulin, Dishion & Boivin, 2002) suggest that these forms may even be associated with: a) a '*positive*' evaluation of aggression (leadership, socialization, reciprocal relationship and friendship with other proactive children, aggressive models…) the former one; and b) a '*negative*' aggression (disruptive behavior, hostile attribution biases, internalizing problems, such as depression or somatization, and victimization) the latter one.

TOWARDS AN EMPIRICAL ATTEMPT TO CATEGORIZE AGGRESSION

While each of the discussed categorization schemes has attempted to clarify the multiple types of aggression, these kinds of classifications have serious methodological difficulties. Sometimes it is not clear when an aggressive action belongs to a specific category. In other circumstances an aggressive action may be classified within two or more categories simultaneously. And dichotomous classifications may be too simple for human behavior that often displays both elements simultaneously (Weinshenken & Siegel, 2002). Further, the behaviors conceptualized by Buss (1961) as indirect aggression were more related to impulsive behaviors rather than to aggressive behaviors (Björkvist, 1994, 1996; see also Ramirez, Bonnac & Cabanac, in press).

Since the design of experiments and methodologies employed in aggression research are strongly influenced by the different types and definitions adopted, a useful framework should be provided for future research. We are aware though that any attempt to sort out the associated behavior of the different aggressive systems would at best be tentative, and that any tentative classification is merely arbitrary. We also acknowledge that some semantic maneuvering is always necessary when making categories (Campbell, Muncer & Bibel, 1985; Muncer, Gorman & Campbell, 1986).

In spite of these limitations, we propose that looking for stronger empirical evaluation of a series of typological models will help to find a refined typological classification scheme of human aggression, which would be key to improving aggression research and the diagnosis, prevention, and treatment of its abnormalities.

With this purpose in mind, and as an attempt at clarifying the above mentioned problems, several theoretical models related with different dimensions of aggression were empirically contrasted in youth and adults [500 students with a range of age between 15 and 25 years old selected from different educational centers of college, professional and university studies from Madrid], using several self-report techniques designed specifically for the evaluation of different facets of aggression [the Aggression Questionnaire (Buss and Perry, 1992), the Direct and Indirect Aggression Scales (Björkvist et al., 1992b); and the Cuestionario sobre Actitudes Morales ante la Agresión (Ramirez, 1993)].

The model providing the best fit between the proposed theoretical framework and the observed empirical data, was the one that considered human aggression grouped into three bimodal constructs or typological dimensions. Three dimensions related to the nature in which aggression could be shown: biological (Physical and Verbal aggression), social (Direct, Indirect/Critical aggression), and contextual or situational (Instrumental and Reactive aggression). Further, these three classificatory dimensions explained satisfactorily the variability of all six types of aggression and the measures that fit the proposed model showed a good adjustment between the theoretical classification and the empirical data (adjusted goodness of fit index = 0.94).

This three-dimensional construct of aggression (for more detailed information on this empirical work, see: Andreu & Ramirez, 2003) shows how aggression may be expressed at biological, social and contextual levels. Further, these three levels are highly interrelated, as is seen in the high correlation (higher than 0.50) between the combined dimensions of the six categories of aggression, as well as by the different types of aggression measured independently. Consequently, there was enough evidence to conclude that the above mentioned tridimensional typology was a psychometrically valid construct for understanding human aggression (Andreu, 2001).

An advantage of this conceptualization of aggression is the possibility of studing the relationship between the varying types of aggression at the level of the different aggressive categories as well as their biological, social and contextual dimensions. Further, this typology could by applied to the development of effective preventative and treatment measures and programs that deal with the violent behavior in youth and adolescence. Prevention programs of contextual, situational or social aggression could focus more on the establishment of alternative behavior repertoires as a way of resolving problems, while prevention programs of biological aggression would be focused on more psychobiological factors such as anxiety, self-control, irritability, impulsivity and fear (Ramirez et al., in press).

In fact, a crosscultural study carried out receintly with Colombian and Spanish students, pointed out the importance of this distinction in order to prevent aggression in adolescents (Andreu et al., 2002). This study showed a higher level of instrumental and direct aggression in Colombian students than in Spanish counterparts. Further, social representations of aggression in Colombians was instrumental whereas in Spaniards it was fundamentally expressive. Education programs designed to prevent and reduce aggression should be based on this important distinction to increase its effectiveness. The theoretical and practical value of this tridimensional model of aggression thus will support future research.

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9

A NEW TRIDIMENSIONAL CONSTRUCT OF AGGRESSION USING STRUCTURAL EQUATIONS MODELLING*

José M. Andreu & J. Martin Ramirez

ABSTRACT

The main aim of the present study was the assessment of the validity of a new typological construct of aggression, elaborated through a structural equation modelling. The sample consisted of a wide range of young adults and adolescents from different educational centers of Madrid (250 males and 250 females, with a mean age of 19,53 years), to whom a set of self-report techniques was applied: the Direct and Indirect Aggression Scale [DIAS] (Björkqvist et al., 1992), the Aggression Questionnaire [AQ] (Buss & Perry, 1992) and the Aggression and Normative Beliefs Scale [ANSB] (Andreu, 2001). The statistical analyses provided greater empirical support for a structural typology of the aggression composed by three dimensions called biological, social, and situational. Physical and verbal aggression were classified in a construct named 'biological dimension of aggression'; indirect and critical aggression were classified in a construct called 'social dimension of aggression'; and, finally, reactive and instrumental aggression were included in a construct named 'situational dimension of aggression'. The social relevance of this classification of aggression as a tridimensional construct is discussed in the context of preventive programs for aggressive behavior.

INTRODUCTION

'Aggression' is well recognized and understood in the common usage of the term. Nevertheless, the concept of aggression is used so broadly that it becomes virtually impossible to formulate a single and comprehensive definition. In spite of the enormous literature on the topic, and the continuous effort shown by many scholars dedicated to studying aggression scientifically, there is much disagreement about its precise meaning and causes, with no singular or even preferred definition. The fact is that aggression is often ill defined, and the best contribution of most of the proposed definitions has been as a critique of those proposed by others. Part of the task of understanding this concept would, therefore, be in clarifying its meaning.

'Aggression' consists of several phenomena which may be similar in appearance but have separate genetic and neural control mechanisms, show diverse phenomenological

* *Merril-Palmer Quarterly* (in press)

manifestations, and are instigated by different external circumstances. It is therefore an omnibus term with a surplus of meanings, related to different kinds of behavior subsumed under this general term of aggression. Further, an insufficient differentiation with other similar constructs, such as violence, antisocial behavior, or delinquency, makes the task of its definition even harder. As a consequence of this lack of unidimensionality, the word ëaggressioní shows a large amount of ambiguity.

Since it is not an unitary concept, it is important to discern their differences and similarities, along with the general principles which may be true for a variety of species, allowing for the possibility of generalizing to human behavior. However, which definition should be chosen? That which simply inflicts harm on others, in a behaviorist approach, delivers noxious stimuli to another organism (Buss, 1961). Or that which stresses the intention to harm, and not simply the delivery of harm, a manifest response aimed at the injury of a target (Berkowitz, 1989; Dollar et al., 1939; Feshbach, 1964)]. Should we even restrict it to that which exclusively attempts to produce physical injury? Or, on the contrary, may we accept it in the very least and broadest meaning, as "the entire spectrum of assertive, intrusive and attacking behavior" (Daniels, Gibula & Ochberg, 1970).

The starting point of the present study has to be an agreement about a precise working notion: what we are looking for, what events precede it, and what kinds of consequences it is likely to have. If we don't establish a clear definition, we run the risk of talking about different phenomena, even if we call them by the same name, falling into many unnecessary potential pitfalls.

This is the case with a term like 'aggression', which is difficult to define precisely. We have to get a working notion which would allow for clear operational definitions thus allowing other researchers to replicate the research. Logically, these operational definitions would depend on the specific type of research done given the multiple disciplines involved in the complex study of such interdisciplinary topic as aggression. We have made previous attempts to provide such definitions (Ramirez & Rañada, 1997, Ramirez, 2000, Reynolds & Andreu, 1999); however, even in these attempts there has not been consensus.

In addition to this conceptual problem, there is the need for a typology of aggression with enough reliability and validity to be used as a psychological construct. But difficulties inherent in defining aggression appear simple in comparison to the difficulty with establishing classification of such an ambiguous construct. The difficulties arise from the multiple social, cultural, and professional influences concerned with the different proposed typologies of aggression. The many tentative classification systems set up by different authors over the past decades reflect a wide array of paradigms for producing aggressive behavior, and an equally wide array of its targets.

Ramirez (1998, 2000) proposed a classification emphasizing the differences between offense and defense rather than on aggression between individuals of the same and of different species. The intention was to provide a means of including human aggression, in spite of the unique peculiarities of our species. For example human aggression has many practical issues connected with it such as the danger of tackling a cornered intruder or passing judgment in cases where a murderer was in a highly fearful state at the time of the killing (Blanchard, & Blanchard, 1990). In Ramirez's classification two main kinds of aggression were stressed. Direct aggression, aggression of a physical character, was divided into three subcategories: offense, a type of aggression usually observed only among conspecifics; defense, a reactive aggressive response against any threatening target; and indiscriminate or

irritable aggression, also reactive but to an unspecified provocation. Indirect aggression is more subtle. Included in this category are dominance displays and symbolic aggression, typical of the human species.

Other proposals take a opposite perspective, and are focused almost exclusively on human beings. Much of the research on classifying human aggression is focused on children, and attempts to characterize aggression in a bimodal way. These schemes include multiple variables and dimensions. One of the oldest dichotomous distinctions between different kinds of human aggression was perhaps that done many years ago by Saul Rosenzweig (1941), who delineated a specific typology of aggressive responses to frustration: a positive/constructive profile (need-persistence), which is adaptive and prosocial, and a negative/destructive one (ego-defense), which is maladaptive and antisocial.

Another group of typologies focuses on the form that aggression may take. From this approach, two subtypes may be considered: a) Physical aggression, produced by direct body or instrumental contact between the contenders; and b)Verbal aggression, produced by language (Berkowitz, 1994; Björkqvist, 1994). A third subtype might be added: Gestures or postural aggression, which may be expressed symbolically or by different facial expressions and body postures.

Other classifications are based on the social nature of aggression, i.e, how it is elicited in social interactions. Consider, for instance, the distinction between direct and indirect aggression: Direct aggression, which involves "overt threats-warnings of imminent attack- or actual physical contact" (Björkqvist, 1994; Björkqvist, Lagerspetz, & Kaukiainen, 1992; Buss, 1961, 1971). Within direct aggression are included those acts produced mainly in a face-to-face confrontation, during a direct social interaction, either physical or verbal. Indirect aggression involves delivering harm circuitously. In indirect aggression, there is no direct contact in the social interaction between two parties, but a third party -another person or an object- may participate.

It is also referred to as social or as relational aggression, when it involves manipulation of social relations or damaging reputation, friendship and social status. According to many researchers, this kind of indirect aggression is more common among girls than among boys during the middle childhood years. These gender differences decline with increasing age, and they are of similar amount in young adults (Richardson & Green, 2002), although the kind of aggressive displays differs according to the sex of the subject (Owens, 2002).

Underwood (2002) distinguishes between verbal and non-verbal displays. Among the verbal ones: gossiping, bitching, whispering, spreading vicious rumors, mockery, sarcasm, using code names, talking loud enough… And, among the non-verbal ones: gestures, staring, rolling eyes, tossing hair, ignoring, social exclusion, etc. Loeber and Schmaling (1985) applied practically the same criteria to antisocial conduct, proposing two types: overt and covert. Little and Hawley (2002) also found a high correlation between overt-direct and relational-indirect, even if they preferred to talk about overt and relational aggression, including direct and indirect aggression as subtypes of them.

Biological and social approaches to aggression are not independent, but rather they overlap one another (f.ex, Yudofsky et al., 1986). For instance, many times the aggressive action is verbal (i.e., criticizing or gossiping about an absent person), but it may also be non verbal (i.e., gestures, ignoring, excluding) or even a physical action (i.e., directed towards ones property or against any other target, either conspecific, or interspecific, or even

inanimate objects). This interdependence makes it considerably more difficult to decide which type of aggression belongs to a certain category and not to another one.

In this context, Buss (1961) proposed a third dimension, referring to the direction of aggression: active aggression vs. passive aggression. This same perspective can also distinguish between extra-aggression (directed outwards), which correlated positively with skin conductance and negatively to heart rate; and intra-aggression (directed inwards), which extreme expression is suicide (Friedman & Pumphrey, 2002).

Depending on whether the primary intent was distress or harm, other authors (Aronson, 1992; Bandura, 1973; Feshbach, 1964; Hinde, 1970; Kingsbury, Lambert & Hendrickse, 1997), also distinguished between instrumental and hostile aggression. Instrumental' aggression is merely a technique for obtaining a variety of objectives (power, money, control and domination, gratification with sex or drugs…), its primary goal being to achieve some form of non-aggressive incentive rather than harming the victim; aggression thus becomes a tool for obtaining the desired reward, and requires neither provocation nor anger. It focuses on changing environmental contingencies, and provides alternative ways of securing reinforcers from the environment; it may fluctuate over time as environmental reinforcements change (Lansford et al., 2002). Physiologically it is marked by under arousal. Hostile aggression is primarily oriented toward the infliction of injury on another individual. It is defined as "an act that is intended to harm another person". This is an angry response to frustration or provocation that occurs in an impulsive manner, motivated by anger and aggressiveness, and elicited by a threatening stimulus that evokes fear, anger, and rage. Contrary to instrumental aggression, hostile aggression is psychophysiologically characterized by a marked behavioral and autonomic (sympathetic) overarousal.

Many other proposed classifications of human aggression -for instance, instrumental and reactive (Cornell at al., 1996) and proactive and reactive (Crick & Dodge, 1996; Dodge & Coie, 1987; Pitkänen/Pulkkinen, 1969) follow consistently this same dichotomy, though they use different terms, with qualitatively different phenomenology and neurobiology, and appearing clearly distinct at the factorial level (Brendgen, Vitaro & Tremblay, 2002): on one hand, the *instrumental-controlled-proactive-cold blooded-offensive-predatory* type; and on the other hand, the *hostile-impulsive-reactive-hot blooded-defensive-affective* one.

The purpose of the present paper is to attempt to categorize aggression into new empirical constructs. Our goal was to provide a useful framework for directing future research since the design of experiments and methodologies employed in aggression research are strongly influenced by the different types and definitions used. We are aware that any attempt to sort out the associated behavior of the different aggressive systems would at best be tentative, and that any tentative classification is merely arbitrary. We also acknowledge that some semantic maneuvering is always necessary when making categories. However, we propose that looking for stronger empirical evidence by empirically evaluating a series of typological models provides a useful approach as an attempt at clarifying the above mentioned problems. Developing a refined typological classification scheme of human aggression is key to improving aggression research and the diagnosis and treatment of its abnormalities.

This distinction between biological and social is unclear. Consequently, three typological dimensions were included: One referred to the biological nature of aggression, including Physical and Verbal aggression, another referred to its social nature, i.e. to the kind of social interaction between the contenders, including Direct, Indirect and Critical

aggression, and a third dimension, related to its contextual/situational nature, with two categories: Instrumental and Reactive aggression.

These three dimensions of human aggression were measure using several self-report techniques designed specifically for the evaluation of different facets of aggression. Physical and verbal aggression were measured by the AQ [Aggression Questionnaire] (Buss and Perry, 1992).

Indirect aggression, as well as a new category found in factor analysis of the scale, termed 'critical' aggression, was assessed using the DIAS [Direct and Indirect Aggression Scale] (Björkvist et al, 1992). Finally, reactive and instrumental aggression was measured by the ANSB [Aggression and Normative Beliefs Scale, Andreu, 2001). All three scales were previously validated using a Spanish population.

METHOD

Subjects.

A sample composed of 500 students (250 men and 250 women) was selected from different educational centers of secondary, professional and university studies in Madrid. Fifty-four percent were university students (n=270), 8% (n=40) were in High school, and the rest belonged to Professional Formation [Level I: 25.6% (n=28), and Level II: 12,4% (n=62]. The mean age of all students was 19.53 years, with a range of age between 15 and 25 years old (standard deviation; 2,91).

Procedure.

Subjects were selected from each classroom, in order to obtain a representative sample to carry out the present study. After rejecting those subjects whose questionnaires had missing or incorrect data, 500 cases of this population were selected, 250 belonging to each sex. The examiner was the same one in all the educational centers. The subjects were informed of the confidentiality, inviolability and anonymity of their answers to the questionnaires.

Materials.

Several self-report instruments, previously adapted to Spanish populations by Andreu (2001), were used in the present study. The order of the questionnaires was counterbalanced to reduce order effects. These tests were:

1) the AQ [Aggression Questionnaire] of Buss & Perry (1992), composed by four scales, related to: physical aggression, verbal aggression, anger and hostility;
2) the DIAS [Direct and Indirect Aggression Scale] of Björkvist et al. (1992), composed by direct and indirect aggression sub-scales; and
3) the ANSB [Aggression and Normative Beliefs Scale] of Andreu (2001) which examined attitudes towards interpersonal aggression, involving eight categories of aggressive acts of different intensity –either moderate (being ironic, shouting, threatening, rage) or extreme (hitting, stealing, killing), and quality in eight different circumstances related to reactive and instrumental situations (Andreu et al., in press).

Dependent variables selected.

Physical aggression, operationally defined as an attack to an animate or inanimate subject using the their body or some other material tool. It was measured with the AQ.

Verbal aggression, operationally defined as a predominantly verbal attack to other persons through insults or *arguments. It was measured with the AQ.*

Direct aggression, face to face; it may includephysical and verbal acts. It was measured with the DIAS.

Indirect aggression, operationally defined as circuitous, through another person or an object, without any direct interaction between aggressor and victim; for instance, defamation, spread of vicious rumors, ignoring and lack of communication, isolation or exclusion from the group, etc. It was measured with the DIAS.

Critical aggression, operationally defined as some aggressive acts, mainly verbal ones, aimed at criticizing somebody; for instance, gossiping, talking nastily about somebody, scoffing at, mocking, being ironic against some one, invidious remarksÖ; it may be either direct or indirect. It was measured with the DIAS.

Instrumental aggression, including a series of unprovoked aggressive acts elicited as a tool or behavioral strategy for solving problems or rivalry over vital commodities, or for getting some social resources; these actions may be either moderate or extreme. It was measured with the ANSB.

Reactive aggression, including the same series of aggressive acts, either moderate or extreme, but elicited as a defensive reaction being aimed at a provocative target: self-defense, defense of others, or defense of onesí property, as well as because of emotional reasons. It was measured with the ANSB.

Statistics.

The AMOS statistical analysis (Arbuckle, 1999), based on structural equations modeling, and integrated in the S.P.S.S., was used in the present study in order to find the structure of aggression with which the empirical data matched better.

RESULTS

Even if several models related with different dimensions of aggression were contrasted, only the model with better fit between theoretical framework and empirical data has been presented in this paper. The model of aggression with a better adjustment between theory framework and empirical data, that is to say, those dimensions representing a smaller discrepancy between the observed data and the proposed model, was one that considered aggression grouped in three kinds of constructs, named: *biological nature of aggression*, *social nature of aggression* and *contextual or situational nature of aggression*. These dimensions agglutinated the following types of aggression: physical and verbal aggression, indirect and critical aggression, and reactive and instrumental aggression, respectively.

There was a high interrelationship among these three dimensions (Figure 1). A correlation of 0.74 was observed among the biological and situational natures; 0.58 between the biological and the social ones; and, finally, 0.55 between the social and the situational ones. Correlations among the three dimensions thus were significant and high.

The three classificatory dimensions explained satisfactorily the variability of all six types of aggression. Indirect aggression had a explained variance of 88%, physical aggression of 51%, critical aggression of 30%, reactive aggression of 58% and instrumental aggression of 49%. The verbal aggression, included under the heading *biological nature of aggression*, was the type of aggression with less explained variance, since its variance was only 17%.

Finally, the measures of fit of the proposed model showed a good adjustment between the theoretical classification and the empirical data (Table 1). In summary, there was enough

evidence to conclude that this tridimensional typology is a valid construct for understanding aggressive behavior in youth and adolescence.

DISCUSSION

Far from intending to be exhaustive in classifying the multifaceted concept of aggression -there are other kinds of aggression not contemplated in this study, the aim of the present study was to find a model which would permit a contrast in psychometric validity of this tridimensional classification of aggression. Among the many typological models of aggression statistically analyzed, the one composed by three bimodal constructs related to the nature in which aggression can be shown, was the one which matched best with the data. Consequently, this proposed tridimensional classification seems to be quite a valid construct for better understanding, diagnosis and treatment of aggression in yought and adolescents.

The first dimension, putting together physical and verbal aggression, was called *biological nature of aggression*, because it referred to how the aggressive acts are executed, physiologically speaking, by the aggressor. The fact that the present results did not offer a full explanation of verbal aggression, which showed a much lower variance that the other types, was due perhaps to the fact that this kind of aggression was only tested by five questions within the scale of the Aggression Questionnaire, and this reduce number of items can influence in both low internal consistency and low explanation for the proposed tridimensional model.

The second dimension clustered together indirect aggression and criticism, under the denomination *social nature of aggression* because it referred to how aggression is expressed along the social interaction between aggressor and victim. A quite interesting observation was that direct aggression was refuted at a statistical level as a relevant sub-dimension in function of its social interaction.

Its typological model showed a low statistical goodness of fit, such as was revealed in the proposed model of structural equations. And this is important because it may seem to be contrary to what many studies assume when they use joint measures of direct and indirect aggression, applying to them the same psychometric instrument. The joint use of indirect vs. direct aggression may be justified as far as they are not utilized in relation to any other type of aggression. But the use of both jointly with other types, such as physical and verbal aggression (f.ex, Yudofsky et al., 1986), may result redundant. The only model showing a good matching between the latent and observed variables of structural equations analyzed, and consequently between theory and empirical reality, was precisely the one that considered indirect and critical aggression as the only subtypes within the dimension ësocial nature of aggressioní. Another plausible explanation of this result could be that a joint consideration of direct and indirect aggression with verbal and physical aggression would allow a mutual overlapping, because direct aggression could be verbal and physical. This explains why the three types of aggression measured by DIAS are physical, verbal, and indirect, but not direct one (Björkqvist, 2002).

The third construct of our typological model was denominated *contextual/situational nature of*

aggression, because it grouped two sub-types -reactive and instrumental aggression, that could be elicited by a serie of situations or contexts such as, for example, defensive or emotional situations, or as a behavioral strategy directed towards the attainment of matierial or social resources. This last typological dimension has a special interest because it helps to

analyze aggression as a kind of behavior influenced by a couple of environmental contingencies, which will modulate it functionally.

This tridimensional typological construct of aggression (see Figure 2) shows how aggression may be expressed at biological, social, and contextual levels, and how, at the same time, these three levels are closely related with one another, as it is expressed by the high correlationship between the agglutinative dimensions of the six categories of aggression, as well as by the different types of aggression measured independently. It has to be stressed, however, that there was no overlaping between these different types; otherwise, it would lead to some difficulties whenever one had to decide which kind of aggressive act would correspond to which category. This classification, therefore, is clearly bonded to the methods used for the evaluation of aggression, which in most studies is done by self-report techniques, like the ones applied in the present research. For individuals prone to instrumental aggression, who may not respond truthfully on self-report questionnaires, the use of social desirability measures may ameliorate this problem. And in the near future a complementary application of various neuroimaging techniques, like the ones we are developing in the Institute for Biofunctional Studies at University Complutense Madrid, may help even more to show eventual functional abnormalities characteristic of instrumental aggression, whereas in contrast those individuals with reactive aggression may show very different patterns of transmitter functioning (Raine et al., 1998).

The conclusions of this study stress mainly the paralelism between empirical-statistical classifications, which reflect what common people have in mind when talking about aggression, and prototypical classifications, like the ones analyzed above. These were an empirical confirmation to some theoretical prototypical classifications suggested by different specialists (for instance, Campbell et al. 1985; Muncer et al., 1986). Our model, based on a serie of empirical measures of different kinds of aggressive behavior, showed a high adjustment between the proposed classifications and the empirical reality offered by a serie of observations.

Generally speaking, the tridimensional typological model proposed here matches partially with other ones obtained by another kinds of statistical procedures. For instance, it matches with the typological classification suggested by Campbell et al. (1985), what stresses the social variation in the meaning of the different kinds of aggression, and assumes that a previous understanding of this is crucial for understanding the motivation of the aggressor.

Our typological classification avoids some of the disadvantages that other kinds of classification could entail a priori because their categories or types of aggression were determined independently from one another. See f.ex. Bjˆrkqvistí s (1984) comments on Buss' classification in relation to indirect aggression]. The aggressive acts were classified in a way that they did not belonged to different categories and, consequently, they did not overlap one another.

Another advantage is that it offers the possibility of studing the relations at the level of the different aggressive categories as well as their biological, social, and contextual/situational dimensions. The six types of aggression analyzed were grouped in only one general factor of aggressivity, whereas when analized in function of age and sex, they were grouped in a bidimensional way. This underlies the complex relationship between each of the types of aggression in connection to the three proposed dimensions or categories of constructs, which are the reference to the definitions the different kinds of aggression encompass to.

Finally, this new typological classification may be of interest in developing some kinds of preventive measures dealing with the violent behavior in youngsters and adolescents. In fact, it underlines the necessity of differentiating aggressive behavior in function of its nature and, consequently, in function of its differentes causes and risk factors. Once those factors contribute differencially to an increase or decrease of different kinds of aggression are established, the strategies for the prevention and reduction of aggression would be quite efficient in their pretensions. Specifically in the case of the contextual/situational or the social dimensions of aggression, the programs could focused more towards the establishment of alternative behavior repertoires as a way of resolving problems. On the other hand, in the case of the biological dimension of aggression, prevention would be focused more towards more psychobiological aspects such as anxiety, self-control, irritability, impulsivity and fear (Ramirez, et al., in press).

In fact, in a cross-cultural study we are carrying out at the present time, the importance of this distinction in order to prevent aggression in adolescents is pointed out. For example, Colombian students showed higher level of instrumental and direct aggression than their Spanish counterparts. Also social representations of aggression in Colombians was instrumental, whereas Spaniards mainly showed a social representation of expressive aggression. This important distinction therefore would increase the effectiveness of educative programs focused on preventing and reducing violence (Andreu et al., 2003).

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III. VIOLENCE, WAR AND PEACE: THE SEVILLE STATEMENT ON VIOLENCE

10

THE SEVILLE STATEMENT ON VIOLENCE*

elaborated by 20 signataires from 13 countries at the 7th CICA
Seville, May 1986
disseminated by decision of the General Conference of Unesco at its
twenty—fifth session Paris, 16 November- 1989

The Seville Statement on Violence is a Statement elaborated by scholars from all relevant disciplines, as a valuable scientific contribution to the educational struggle for world peace, within the context of the United Nations International Year of Peace. Its main message is that there is no reason to conclude that violence and war are biologically inevitable. Its final draft was written at the Sixth International Colloquium on the Brain and Aggression, held at Seville (Spain) in May 1986, under the co-sponsorship of the Deparment of Psychobiology of the Seville University and the Spanish Commission of Unesco.

The SSV was designed for use by high-school teachers, youth leaders, and anyone else who wants to work for peace and who wants to challenge the myths that have been used to justify violence and war. It has been endorsed by more than 40 scientific organizations and disseminated by more than 35 other ones, included the Unesco.

The Seville Statement on Violence was adopted by Unesco in 1989 as part of its effort to counter ideas which have been used to justify war and violence. The purpose of Unesco was to disseminate the Statement and to use it in programs of education for peace and International inderstanding, as part of its commitment to work for peace and security. As stated in the Unesco Constitution: "Since wars begin In the minds of inen• It is In the minds of men that the defences of peace must be constructed."

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* *Cahiers du Mouvement Universel de la Responsabilité Scientifique*, 5: 51-59 (1986).

INTRODUCTION

This Statement is a message of hope. It says that peace is possible and that all wars can be ended. It says that the suffering of war can be ended - the suffering of the people who are injured and die - and the suffering of children, who are left without home or family. It says that instead of preparing for war, we can use the money for things like teachers, books, and schools, and for doctors, medicines, and hospitals.

We who wrote this Statement are scientists from many countries, North and South, East and West. The Statement has been endorsed and published by many organizations of scientists around the world, including anthropologists, animal scientists, biologists, biochemists, ethologists, geneticians, physiologists, neuroscientists, political scientists, psychiatrists, psychologists, psychobiologists, and sociologists.

We have studied the problem of war and violence with today's scientific methods. Of course, knowledge is never final, and someday people will know better than we know ~ today. But we have a responsibility to speak out on the basis of the latest information. This is the best we can do at this time.

Some people say that violence and war cannot be ended because they are part of our natural biology. We say that is not true. It's like when people used to say that slavery and domination by race and sex were part of our biology. They even claimed that they could prove it scientifically. But now we know they were wrong. Slavery has been ended and now the world is working to end all domination by race and sex.

FIVE PROPOSITIONS

5. It is scientifically incorrect when people say that war cannot be ended because animals make war and because we are like animals. First, it is not true because animals do not make war. Second, it is not true because we are not just like animals. Unlike animals, we have human culture that we can change.

6. It Is scientifically incorrect when people say that war cannot be ended because it Is part of human nature. Arguments about human nature cannot prove anything because our human culture gives us the ability to shape and change our nature from one generation to another. That Is what history is all about.

7. It is scientifically Incorrect when people say that

violence cannot be ended because people and animals who are violent are able to live better and have more children than others. • Actually, the evidence shows that people and animals do best when they learn how to work well with each other.

8. It is scientifically Incorrect when people say that we are violent because of our brain. The brain Is part of our body like our legs and hands. They can all be used for cooperation just as well as they can be used for violence. It depends-an how we are brought up and how we choose to live our lives.

27. It Is scientifically incorrect when people say that war is caused by 'instinct'. We do not have instincts because none of our behavior is so determined by biology that it cannot be changed by learning. Of course, we do have emotions arid motivations like fear, anger, sex, and hunger. But we still decide how to express them. In modern war, the decisions and actions of generals and soldiers are not usually emotional. Instead, they are doing their job the way they have been trained. When soldiers are trained for war and when people are trained to support a war, they are taught to hate and fear an enemy. The most Important question is why they are trained and prepared that way in the first place by political leaders and the mass media.

CONCLUSION

We conclude that we are not condemned to war and violence because of our biology. Instead, it is possible for us to end war and the suffering it causes. We cannot do it by working alone, but only by working together. however, it makes a big difference whether or not each one of us believes that we can do it. Otherwise, we may not even try. War was Invented in ancient times, and in the same way we can invent peace in our time. It is up to each of us to do our part.

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11

THE NATURE OF VIOLENCE AND WAR*

J. Martin Ramírez, Robert A. Hinde, & Jo Groebel

The idea for this hook grew out of our interactions with researchers from diverse backgrounds interested in making clear that there is no reason to conclude that violence and war are biologically inevitable. We sensed considerable enthusiasm in attempting to draft a Statement with that message elaborated by scholars from all relevant disciplines, as a valuable scientific contribution to the educational struggle for world peace, within the context of the United Nations International Year of Peace. What followed was the Sixth International Colloquium on the Brain and Aggression, held at Seville (Spain) in May 1986, under the co-sponsorship of the Department of Psychobiology of the Seville University and the Spanish Commission of Unesco. The almost fifty scholars invited to this meeting coming from 16 countries from all around the world contributed knowledge from most relevant disciplines for the purpose of helping in the solution of this interdisciplinary as well as international problem of violence and war. The present volume is a selection of their contributions.

Human history has been largely a history of wars. From the start of the archaeological record, human groups, human tribes, human nations have fought with each other. A common deduction from such facts is that war is a part of human nature, and that wars will inevitably break out from time to time. These essays expose the inadequate foundations for such a view.

The issue is an important one because politicians and military leaders have used the supposed inevitability of war to justify their policies. Thereby those who think differently from ourselves, or who happen to have needs similar to our own, are turned into enemies. and the flames of war are fanned.

Acceptance of the inevitability of war leads to resignation, and resignation to a refusal to seek for ways to prevent it. Indeed, we would put it more strongly than that: acceptance of the inevitability of war makes war more probable. Yet even wars fought with so-called conventional weapons become more and more devastating, and involve to an increasing extent non-combatants as well as soldiers in uniform. If a nuclear exchange were to occur. the consequences would be unthinkable.

Of course the very fact that wars have been so frequent in the past indicates that the task of their abolition will be a difficult one, with many obstacles to be overcome. Indeed history is also a record of the failures to achieve that goal. But our most important source of strength is the knowledge that the task is possible, that war is not inevitable.

We start with evidence from animals. That many animals fight members of their own

* J. Martín Ramírez, R. Hinde & J. Groebel, *Essays on Violence,* Seville: Publicaciones Universidad de Sevilla, 1987, 13-16

species, sometimes to the death, is well known. But that is not the same as war. John Paul Scott argues that war is not something we have inherited from our non-human ancestors, but a human cultural invention which depends on capacities peculiar to the human species.

Indeed we would argue that war is in fact an institution in which individuals fill their special roles -generals, soldiers, munition makers, politicians, scientists, and so on. Each role has its attendant rights and duties, and the social imperatives associated with those roles are much more important as determinants of individual behaviour than aggressive impulses directed towards the enemy. One of the many mechanisms by which the institution of war affects the behaviour of individuals involves the 'enemy image', discussed by Rita Wahlström.

Aggressive impulses enter into the creation of the institution of war, and politicians exploit them in their rousing speeches and in propaganda in order to coerce individuals to take on the roles that the institution of war decrees. But aggressive tendencies play less part in the behaviour of the soldier than fear, obedience and cooperation with comrades, which are much more important as motivating forces. Since human behaviour has a flexibility not found in any other species, surely we can rid ourselves of this institution and order our affairs in better ways?

The institution of war depends on the supposition that we are intrinsically violent. This issue is tackled by Ginsburg & Carter. They demonstrate the diversity of the factors that contribute to violent behaviour between individuals. War is seen as based on psychosocial factors, and hardly at all on biogenetic ones. And since they argue that we are "unique in our ability to exercise free will in our choices of behavioural alternatives", war is not inevitable.

> Santiago Genoves reaches a similar position from a quite different perspective. Bringing together evidence that institutionalized war did not become general until after the Agricultural Revolution, with evidence from a variety of scientific fields that man is not by nature necessarily violent, he argues that scientists must both study the nature of human violence and ensure that the results of their research are communicated to political leaders.

Caballero tackles the psychological and sociological causes of violence. This involves the integration of diverse strands within the behavioural sciences, but leads him to a conclusion similar to that reached by the other writers namely that man's violence is the result of decisions taken.

Many of these issues are brought together by Jeffrey Goldstein who discusses the bases of the myth of human aggressiveness. The importance of recognizing that it is a myth is demonstrated by Adams & Bosch, whose data indicate a close relation between a belief in the inevitability of war and lack of interest in taking active steps to prevent it.

It is one thing to argue that the abolition of war is possible, another to specify the precise steps to be taken. Martin Ramirez, after specifying the true peace we all hope for — it has to be active, based on knowledge and self-control, and long-lasting, based on justice and freedom for all—, outlines some major strategies for a peaceful solution of conflicts, for an efficient education for peace, through a multi-dimensional and cross-disciplinary approach, rooted both in biological and cultural bases. This approach will gradually foster

non-violence, tolerance, co-operation and friendship.

The book concludes, therefore, with an optimistic and hopeful sign for thee future of the mankind: Peace is not only essential, hut it is also attainable. The solution of the problem of war is none other but the confirmation of life, with a passionate hope for peace. Yes, passionate —that is, necessarily charged with passion, because hope without passion is a lack of hope.

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PSYCHOBIOLOGY OF PEACE: GOALS AND PREMISES*

J. Martin Ramirez

INTRODUCTION

The problem of achieving peace, after so many fruitless attempts throughout history, could seem a problem without solution. Indeed the complexity of the issues lead to difficulties in conceptualization which sap the motivation to phrase the problem scientifically. Is it worthwhile to return to a problem whose real solution appears to be highly improbable?

There is, however, universal agreement that problems of peace are the most serious of all problems for humanity. That is why increasingly more attention is being paid to its study. In facing a problem so complex and so important, and involving such a variety of opinions, we must be audacious.

The aim of this symposium is to pool scientific knowledge from the multiple disciplines represented in order to reveal as erroneous the old idea that violence is incurable, and to find a scientific basis for enduring peace. In order to progress in this attempt, we must try to agree on some of the basic pillars on which a real peace can be based. Therefore, I shall discuss a number of premises, which I see as necessary for fruitful discussion of these issues.

PREMISES

A first premise, essential for fruitful discussion is to specify the **meaning of the terms** to be discussed. Whether one regards people or societies as 'violent' or 'peaceful' depends on what one admits as 'violence' or 'peace'. A difficult task, if we look at the essence of these terms. If we try to respond categorically to the question, what exactly is 'peace' or 'violence'? we run the same risk as someone "who strips the artichoke of its leaves to find out what is in the vegetable" (Pitcher, 1981), of ending up with something which is no longer the artichoke, or peace or violence. Perhaps It would be better to take on a more operational approach: 1) to try to find the descriptive or determining characteristics which distinguish them from other phenomena, and *2)* to try to classify them by using a series of distinctive criteria (Ulich, 1982).

The very concept of 'peace' has an inherent complexity because its meaning in each culture reflects the foundation of that culture. Therein lies the advantage of a broad group of scientists with very diverse cultural attitudes, like those contributing to this symposium.

* In: J. Martín Ramírez, R. Hinde & J. Groebel, *Essays on Violence*, Seville: Publicaciones Universidad de Sevilla, 1987, 134-155

So, for the traditional thinkers, who believe that war is an innate condition of man, peace will be understood as an absence of war which can only he secured by force: the Greek word *eirene* refers to an order secured by an interlude in war, and the *pax romana* to a state of affairs secured by a pact or agreement. This absence of war, however, is not necessarily implied in the concept of peace from a religious perspective, in which peace is seen as the satisfaction of 'the will of God', divine will which nevertheless sometimes requires going to war 'for God' (Christian Crusades, settlement and defense of Israel, or the Islamic *jibad* which can he translated as 'a fight for the code of Ala', as examples of 'Holy wars'). That is how we are to understand the Arabic *aI-Islam* ('to be at peace' or 'to give absolute devotion', both meanings integrally connected) and the Hebrew *shalom,* which means living in alliance with Yahweh and usually implies the desire for justice and well being. This intensive well-being and inner peace (peace of mind) also seems to be implicit in the Sanskrit *santi,* as well as in the Oriental conceptions of the Chinese *p'ing ho* (obedience to cosmic order, harmonious mind) and the Japanese *heiwa,* the peace of the samurai, which involves killing in order to get to heaven. Peace, therefore, means a dynamic and living process, not a tranquil state of being (Anderson, 1985).

But neither are we searching for a peace which could be understood as a mere 'passive process of immobility and stagnation' —this absolute peace is found only in the cemeteries—. We search rather for a peace involving 'an active process of research, ones own knowledge and that of others; and even audacity' as Genoves puts it, an active, engaged, committed peace, the spirited fruit of a respectful and tolerant balance with others and of a demanding struggle with ourselves. We have to convince ourselves once and for all that there can be no peace without struggle, that man must strive, and that in order to triumph and to feel inner peace, one must face the obstacles in the world, commit oneself to progress with all the risks involved and use one's energy in the optimal and most efficient way possible. We cannot close our eyes to the reality that in life conflicts exist; moreover, not all conflicts are pathological and must be avoided; to try to suppress them is a seeking for Utopia and may be self-defeating. Avoidance of conflict could be achieved only through apartheid, divorce or a resigned renunciation of one's own errors. We must struggle for love, within mutual respect, without violence or hate, putting into "our confrontations the humor of children when they are play fighting, without excess, in trying to confirm their strength" (Chauchard, 1972), safeguarding the existing biological differences and not proposing that the feminine should become masculine, for example. In that way, while a hateful struggle entails selfishness, fear, insecurity and grater violence, a struggle for love responds to our real desire to live, fighting against selfishness; and leads us to confidence, calm and peace.

Furthermore, although peace is usually understood to be the negation of violence, we must be arduous in giving it a more positive meaning. Although peace is closely related to war, as a consequence of victory, to conceive of it as a mere absence of violence, physical or psychological, would leave us with a fragile, precarious and negative concept. I shall try to explain, using words from the Unesco Resolution at the General Conference in 1975: "Peace cannot consist only of the absence of armed conflicts, but rather it involves mainly a process of progress, justice and mutual respect among all peoples". The opposite —and I continue to speak in Unesco's words—, "a peace based on injustice and the violation of human rights cannot last and inevitably leads to violence". Therefore, far from settling for a peace imposed by fear or by a fragile armistice founded on unfairness, we must search for a positive, profound peace, the fruit of an absence of "structural violence", and based on social justice, i.e., on the reliable existence of a minimum of vital goods to allow the people the satisfaction of their fundamental needs. Those terms of 'negative peace', as absence of personal violence,

and ‘positive peace’, as absence of structural violence, were popularized by Johan Galtung in 1969.

In effect, violence is not limited to the mere destruction of, or an attack against physical or psychological safety (homicide or war), but is associated with a whole series of denials of basic properties of the human condition that can themselves lead to violence, such a poverty (the lack of minimum materials such as: home, clothing, food, medical attention), repression (where neither freedom nor human rights are respected) or alienation (a lack of spiritual needs and cultural needs). These privations, the result of unfair conditions all too often permitted, if not encouraged by abuse of overhearing power, are known as ‘structural violence’. Although usually hidden behind facades of social injustice, breed a whole array of violence and. consequently constitute an obstacle to true and lasting peace. A definition of peace, therefore, should be based on justice, the real suppressor of violence. But, if violence is a phenomenon opposite to freedom and happiness, perhaps both of these ideas should also be included in. the concept of true peace. The Romans understood this well when they said: *Pax* est *tranquilla libertas.*

In spite of the preceding conceptual comments about ‘peace and ‘violence’ and the importance of the issues to all of us, the enormous complexity of the conceptual problems tells me to leave them to the philosophers (see f. ins. Aron. 1966; Galtung, 1969. 1980. 1981: Bay, 1970: Dencik. 1982; Maley, 1985).

Although I doubt if we could come to an agreement in this symposium on definitions, which have been discussed since the beginning of time, pragmatic realism tells me that won’t be necessary either. All that we can, and must, ask for is consensus over an outline of a useful conceptual reference, which will enable us to explore psychobiological and sociological considerations.

A second premise on which all agree concerns the **multidimensionality** of the concepts of peace and violence. Whereas a common tendency in behavioural sciences is to define and isolate independent variables with the hope that their modification will change the whole system, the phenomena of peace and violence are subject to multiple and complex causes involving multiple feedback processes. Consequently we must not assume linear causality, or hope that changing only one variable will create change; indeed even elimination of a number of causes may not be sufficient for the elimination of violence. Because the system is ‘patterned’, it is usually impossible to characterize uniquely each independent, dependent and mediating variable. Therefore, in trying to analyze the totality of the phenomena, we must not limit ourselves to analyzing a particular field of problems but rather we must keep many facets in mind simultaneously, trying first to discover its organization so later to understand its mechanisms of action.

As a third premise, and in no way undervaluing the interest of particular detailed approaches, this complexity and multiple causality suggest the need for **a multidisciplinary approach,** which will emphasize the mutual interdependencies between various scientific perspectives. At a time when researchers are compelled to take on increasingly more specialized and fragmented tasks, the study of violence and peace requires the unification of very diverse research approaches. Specialists dedicated to work in one narrow field are poorly equipped to deal with such questions. ‘Peace’ and ‘violence’ may be properly studied only through cross-disciplinary knowledge, in a long and profound debate, which allows for a new

and broader analytical perspective. Scientists must also learn about areas other then their own (Senghaas, 1961). As Barnett (1986) has written, “more generalists are needed to solve problems in the real world”. This multidisciplinarity —or better yet cross-disciplinarity— will permit a much more literal and rich exchange of experiences, beyond the limits of each discipline.

Without losing sight of multidisciplinarity, a fourth premise involves emphasis on the **biological attributes** of peace and of life. Let it be understood that we have no intention here to concentrate on either biological explanations or cultural factors alone. On the contrary, we are convinced that we must not describe our problematic species exclusively in biological terms, but neither can we turn our back on biology. It is incorrect to believe that peace will be achieved, or violence reduced, by changing individuals, without worrying about the environmental situation in which the live; hut it is no less hopeless to aspire to achieve peace by appealing only to political and social factors, disregarding biological ones. We are the result of both biology and culture, in mutual interaction. Therefore, if we are to try to eradicate potential violence and encourage a lasting peace, we must to be aware of the constraints and predisposition that are inherent in human mentality; and to do that we must know human nature as well as possible, and become aware of the cerebral mechanism, their possibilities and their limitations. Only in that way can we intelligently choose the options, which may lead us closer to happiness.

Therefore, because the brain is the fundamental organ for learning, thinking and acting, an awareness of psychobiology and neurobiology is essential. The specialists in psychobiology and neurobiology can provide human standards for sociology. If the sociologist denies the biological nature of our species, he will not be aware of our weaknesses, our incapacity, and our biological limitations: he may then attempt to make humans superhuman by unnatural modifications, which would turn us into unsuccessful monsters. There is no suggestion here that we should want to become something inhuman, with pills, surgery, hibernation and other biotechniques, but rather that we should strive to understand our brains better, clearly recognizing the good and the bad, understanding the reality that surrounds arid guides us through our own systems of references (which themselves differ according to the individual experience of each person), and working consciously on self-control.

Moreover, in our continuous struggle toward true peace we must safeguard our biological differences, knowing that each individual has a unique genetic structure, brain, and fingerprints, different from those of all others. One can only improve by getting to know oneself better, knowing that ‘there is no best’ for every body. Each person is uniquely limited, according to his biology, his personality, his knowledge and skills and his personal background, which is the fruit of previous experiences and learning.

In summary, an exploration of the biological substratum of human nature arid its individual differences will enable us to articulate our reflections on a psychobiological level and thereby increase the productivity of other equally necessary approaches —pedagogical, social, cultural and philosophical— to the problem of peace.

A fifth premise is that we must endeavour to construct a science and technique for peace, which will make violence and injustice impossible. The belief that the way things are is the way they ought to be (the naturalistic fallacy) is a logical error which commits to the fatalist view that any change must be for the worse. Contrary to it, we plead for an optimistic

token of hope for the future based not on mere irrational and unfounded desires, but rather on a scientific view that **violence is eradicable**.

There has been considerable debate concerning the nature-nurture problem which, in the present context, usually materializes in questions asking whether peaceful societies exist or have existed, or whether violence is something inherent to human nature and, therefore, is inevitable. Apart from the fact that we believe this to be an obsolete argument (Ramirez, 1978, 1984), it is equally sterile and lacks explanatory utility. The old controversy between the trigger theory which stated that environmental stimuli only drag the violent roots of human nature towards destruction, and the theory of conditioning, according to which experience and learning are what produce peaceful or violent tendencies in a nature which was born *quam tabula rasa*, is valueless because all our characteristics depend both on own biological nature and on our experience. Contrary to the fatalistic determinism dominating the 19th century, the fact that behaviour is inherited by genes does not mean that it cannot be influenced by the environment (Lehrman, 1970). That genetic differences can involve propensities to violence in some individuals does not imply an absolute certainty that they will behave violently; it refers only to a certain probability in certain environments. As Black says, "what is innate need not resist change, and if changed need not to cause frustration".

Today we tend to explain this problem by accepting the interaction between heredity and environment. Currently, no scientist accepts that we are all born like. Each person is born different from all others, and it is therefore reasonable to suppose that some people will be born with more or less of a constitutional inclination to be peaceful or violent —a constitution on which not only heredity, but also many pre-, peri-, and postnatal factors will have an influence. Biology does have an influence, but it is modifiable and educable. As Delgado says: "men are modifiable in their genes, their brains and their hearts'.

The time has come to uproot the erroneous belief that tended to present biological factors as associated with fatalistic determinism, in comparison with psychological ones, which deal with probability and freedom. We must reveal the bias of those who believe that man is by nature a basically evil, aggressive, warlike and unchangeable being. We must unmask those who, basing their ideas on this pessimistic concept of human nature —an image of human depravity by fixed destiny— fall into misanthropy, implying that most attempts to improve the human condition are against nature and so must fail and that there is no hope for progress. This false belief that there is nothing that can be done to promote peace or to prevent war becomes an excuse for inaction.

Recognizing the existence of biological predispositions is not a form of fatalism. Our daily experience, on the contrary shows us human beings who are capable of rejecting what is conventionally held to he inevitable and determining their destiny by conscious, deliberate actions. We know that we have more than enough intelligence to control the expression of our feelings; that we can freely be peaceful or violent and that consequently we must feel personally free and responsible for our actions, without any inevitable biological basics getting in our way One of the most important distinctive features of our species, which distinguishes us most sharply from other species, is the plasticity of our behaviour, attitudes and intentions. The teaching of skills, which occurs in every human society, is confined to *Homo sapiens.* According to Barnett (1983), we could call ourselves *Homo docens.*

In short, given that heredity influences all that we do, not only predisposing the bad — selfishness, violence, war— but also the good —helpfulness, cooperation, altruism, peace—, we must attribute man with the capacity to make war as well as the capacity to live in peace. Furthermore, whatever we are genetically, our phenotype in continuously changing with the

influence of our environment. Therefore, the plasticity of our biological reality enables us to improve, to have hope in the future: ‘we are not obliged to he misanthropic; optimism remains open to us’.

GOALS

1. What kind of peace do we want?

• Not the passive and stagnant peace of cemeteries, but an active peace, fruit of continuous struggle and of capacity to control one-self, based on knowledge and love, the origin of all things.

• Not a precarious peace, imposed by fear or by a fragile armistice on weapons balance, and party to flagrant social injustice, but rather a positive and lasting peace, based on justice and love, and a recipe for true freedom and happiness, to the extent that this is possible.

2. Strategies for the peaceful solution of conflicts

The fact that there are conflicts throughout life does not necessarily imply that they are inevitable; and solutions to interpersonal or intrapersonal conflicts do not necessarily have to be worked out by violence or force. On the contrary and especially given the adaptability and flexibility of human conduct, the solution must be sought through alternative, non-violent strategies. And these strategies must first be learned, through an increasingly better knowledge of oneself, of science in general, and of the roots, potentials, and limitations of peace. Therefore potentials, we must promote proper education about peace in which the participation of the whole society, and especially of those more influential groups, such as the mass media, is absolutely essential. Let me analyze some of these statements.

2.1 Situations of *conflict*, intra-and interpersonal problems must be *solved peacefully* by rational, non-violent means, adhering to certain norms. We do not mean to deny categorically that violence may, at some times, be philosophically or ethically justified —for example, by demands for necessary changes that would otherwise not be attainable. We are all familiar with the idea of disobedience to a tyrant presented by Thomas of Aquinas. But, even if it might be justified as a last resort, the fact is that that resort, from every point of view, is terrible, because violence is contagious: it breeds violence which, like a boomerang, turns against the person who uses it destroying even the purpose it sought to serve. We want to confirm that man has a motivational structure sufficiently equipped for peaceful coexistence: the command ‘you shall not kill’, man’s innate ethical code, encourages brotherhood with others by extending the family ethos to all humanity, as Eibl-Eibesfeldt (l979) claimed. Some ways to achieve this are common to man and animals, such as the ritualization of conflict, submission, mediation by a third party rank orders, banding and conciliatory patterns, avoiding provocation, development of rules and evasion. Others are typically human, such as marriage ties, rousing humanitarian feelings and group integration. These are wars for solving conflicts peacefully.

2.2 Document C/67 of the last General Conference of the Unesco, ‘Educational plan for international understanding, cooperation and peace’ (Sofia. 1985) recommended the promotion of “the capacity of research, training and information about the factors which preserve

and reinforce peace". The greater our knowledge, the more responsible, the freer and the happier we will feel. Unarnuno said this, in the Ateneo of Valencia, at the beginning of the 20th century: 'only an educated man is free, and the more he knows, the more free'. As Barnett concludes in his valuable contribution to this symposium (1986), "as knowledge grows, the range of choice open to us enlarges. Whatever is achieved, there is always the possibility of something betters. Inspired by the statement "No limit can be put!", and if we want to discover the reasons why violence is sometimes resorted to, and the causes leading to peace or the possibilities and limitations of human nature in view of such problems, we must begin to **explore the biological and cultural roots of violence.**

2.2.1. *Biological bases:* a look at the literature on war and violence shows several attempts at explanations or suggestions for solutions based on biological arguments: aggressive instincts: territoriality: the reservoir theory according to which one should vent ones feelings by boxing, watching violence or throwing plates against the wall, that is, the use of energy: the reduction of basic activity in the organism through certain skills for avoiding violent reactions... There is, then, something that biology can say for peace. Let us limit our comments to two points: genetics and physiology.

In speaking about the principles that must guide our task, we said that genes influence everything we do good and bad, by close and continuous interaction with our constantly changing environment. If we accept, therefore, that all behaviour has a genetic substratum, we must examine the variation among individuals and populations. Although all men's brains may have generally similar motivations —to seek good and to avoid the bad, the propensity to peaceful or the violent behaviour may vary from one individual to another because of genetic diversity. Although this diversity is so great, as Ginsburg reminds us, that any exact repetition of the same characteristic is unforeseeable, even in twins, nevertheless there is no hard evidence, apart possibly from certain pathological cases, that it makes any substantial difference to individual variation in aggressiveness. The different developmental history of each person has a major influence on his propensity to aggression.

Another point of practical interest in a biological discussion about peace is the analysis of motivations —"the problems of peace and war are highly emotiogenic" (Bekhtereva, 1985) — as well as an analysis of the physiological reasons, thereby promoting better cerebral control over affectivity, cerebral control whose secret lies in knowing how to control one's own passions, avoiding destructive violence, but without rejecting wise passion, with all the commitments and risks involved, in search for the good (Chauchard, 1972).

2.2.2. *Cultural bases:* Aside from the biological basis, we must also explore the cultural bases for peace. The studies by Mantell (1974) on the standing influence of the family circumstances on the practice of violence ('green berets' in Vietnam) and non-violence (conscientious objectors), a clear demonstration of the influence of education, have already become classic. Moreover, recent investigations in our Department, comparing interpersonal relationships in children from families who get along well, with others from families with disrupted atmospheres prove even more clearly the influence on the habit of violence of the social background of children during the earls' years when the personality is still labile (Mendoza & Ramirez. 1981). Let us make here only two brief comments: First, if we truly want to ensure peace, we must try to provide for basic human needs, for adequate living conditions, because the only way really to keep the oppressed from rebelling, from becoming violent, is to encourage their promotion. And secondly, we must discuss how the basic cultural needs of human individuals affect their biological substratum.

2.2.3. To obtain the most effective scientific knowledge about peace we must foster a *cross-disciplinary perspective.* We must remember that for solving problems in the real world, specialists are poorly equipped: more generalists are needed, cross-cultural experts who stress ontogenetic studies, concentrating primarily on the sensitive periods of human development because, "if the circumstances in which individuals develop could be changed so as to minimize the development of propensities to aggressive behaviour and maximize those for co-operative behaviour, aggression between individuals could be effectively eliminated' (Hinde, in this symposium).

2.3 Among mans multiple resources for reaching peace, the most important one is **education.** In Unesco's last General Conference (Sofia 1985), all countries agreed on its important role for a lasting peace. Unesco urged that activity in this field be focused on what education, science and culture can contribute to peace, as mentioned above. After touching upon the importance of research and knowledge, it is time to go into detail; that is, to look for the best war to transmit that knowledge, bearing in mind that it is not enough to impose standards. We must make people aware of the need for achieving peace through proper civic education.

2.3.1. Eibl-Eibesfeldt (1979) listed several possible models for a life of peace: a manipulated system offering absolute security and stability', a system of inter-supreme authority', pacification through changes in internal organization of states (through democracy, socialism or cultural revolution), vital contributions of higher religious work for peace by peaceful means, attaining peace by eliminating individual aggression and —his proposal— education in tolerance and willingness to understand.

2.3.2 In our opinion, efficient education for peace should aim for a supreme guarantee of justice and respect for personal human dignity, a guarantee that must be accomplished gradual**ly,** developing non-violent relationships, preaching tolerance and. above all, fostering what is often referred to as pro-social behaviour.
a) The first thing that must be taught is the control of all violent behaviour by the *development of non-violent relationships.* Based on the theoretical principle of passive inhibition (a person learns to be non-violent by being non-violent), the best technique for it, according to Scott, is not to enforce inactivity hut to reward non-violent activity and to encourage self-rewarding and constructive behaviours (for example, intensifying play).
b) The next step would be *a tolerant attitude:* encouraging all types of available cultural rituals, such as feast, greetings, gifts and good manners, which are effective controls on aggression; favoring respectful dialogue with others; recognizing the right to be different and bearing with those who think differently from the way we think. Discrepancies are always enriching. Furthermore, we should stress understanding on an interpersonal as well as intergroup level, avoiding stereotypes and nationalistic feeling which are not only obsolete, hut harmful as well.
c) A supreme level of proper education for peace should promote the spirit of *solidarity cooperation and friendship* among people, based on the awareness of human fraternity. This applies to the family as well as to the broadest international community It includes those actions known in psychology as pro-social behaviour (Mussen & Eisenberg-Berg, 1977), a behaviour that can be reduced to generosity, altruism, sympathy... and peace.

2.3.3. If we truly want peace based on justice and understanding, we must teach peace by setting an example. We should start this peace work in ourselves, practicing reflection and self-control in order to develop an altruistic, unprejudiced personality, respecting human dignity and justice (Wahlström, 1985). If we really' want to convey peace to our fellow men,

we first have to be peaceful ourselves, because as classics said, *nemo dat quod non habet.* This capacity for self-control, which shows the capacity to act on one's own (what Mayor, 1985, calls 'sovereignty over oneself') can be greatly promoted by education. But we must never renounce our 'commitment', our 'engagement' with justice.

2 4. In this ambitious assignment for attaining more peace and less violence, it is important to have the responsible **help of the entire society** and especially that of the mass media, given their enormous influence on society and their responsibility for the promotion of knowledge and understanding among all people.

3. In conclusion, peace is attainable

As Eibl-Eibsfeldt (1979) states, "it corresponds to our inclinations..., it is the goal of the great religions and ideologies..., this common aspiration create a bond over and above ideological patterns, that could lead from confrontation to cooperation..." Peace requires much more courage than war; somebody said: "war can be made by one crazy man, but peace needs at least two wise men to sit down together". It is a difficult task, therefore. A task that involves teaching everyone that the origin of everything is love and not war. It is difficult... but attainable. And it is a worthwhile task, because to embrace peace is to embrace life.

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13

THE EDUCATIONAL TASK OF OVERCOMING VIOLENCE*

J. Martin Ramirez

INTRODUCTION

Once we understand that the problem of violence can be solved, our next point should be to seek solutions to the problem, and to apply the adequate therapy. This task transcends psychobiology (brain, hormones, nerotransmitters, drugs, nutrition…), to take into account many other important psychological, social, political, economic, and cultural facets… Professionals in the fields of education and communication have an important task to perform: to educate people to overcome violence, whereas other professionals are more involved in its etiology and description. I do not even have to remind you that the primary reason of education is the formation of the individual, giving him/her the necessary cultural tools for coping adequately with his/her social environment. The sociopolitical importance of education, including the mass media, is evident.

My present contribution, therefore, is to point out how an enlightened education of the people can help in this task. The main message of my intervention will be that, even if human violence has a biological root, we are in position to control, modify and shape it through learning.

The educational task of overcoming violence has to be applkied at several simultaneous ways, which may be grouped in three points: general education, psychobiological education, and civil education.

GENERAL EDUCATION

Illiteracy is a serious threat to peace because it feeds radicalization and undermines the value of human life. Keeping in mind the extent of violence in S.A., one gets the impression that human life is considered by many people to be cheap. The greater the cultural level, the more tolerance and

* In: J. Martin Ramirez, *Violence. Some Alternatives*. Madrid: Centreur, 1994, 113-146

comprehension are generated and the more respect for life is instilled.

The danger of indoctrination is also much higher among illiterate people. They are in greater danger of being culturally manipulated, particularly with the increase of the mass media and with the propagation of information or disinformation which may be aimed particularly at distorting the brains of the youth, and directing them to make decisions ethically unacceptable.

I don 't have to remind you how important education is to S.A. where most of the 28 million black people are illiterate (55% to 63%, statistics differ in the exact percentage). Many illiterate people live in remote rural areas, making access difficult. There has been a nearly total collapse of the educational system for most of the estimated ten million school-age black children. More than half of all the black students drop out school. And, what is even sadder, the "people's war" in the mid 80's urged the masses as a whole, and the angry youth in particular, to mobilize which often led to a random violence with no command structures and also brought education to a standstill[1]. The youth had as its banner the slogan "Liberation Now, Education Later", which shows that many young blacks really do not appreciate the importance of education. An estimated three million young blacks are becoming part of a "lost generation" of virtual unemployables, which creates a big educational, emotional and employment problem for the New S.A. where the percentage of qualified people is scarce.

Another important problem of this educationally marginalised youth is its culture of defiance, already reflected in a large spread lack of respect for the teachers. During 1992, for instance, 560 teachers were assaulted and three were murdered. Many of this "lost generation", who lack adequate socialization, seem to have absolutely no value for human life; they don't know what it is to die. Remember what the then President of ANC, Oliver Tambo, declared in 1985: "we have called on the people in general to make the country ungovernable... and what is happening is a response to that call... We can't tell our children that what they are doing is very dangerous. They are sustained by a hatred of the system"[2]. The real fact is that these illi terate children are a threat to democracy. A black writer, Nomavenda Mathiave, says that in the interest of mobilization, political organizations "gave the children the power to disrupt life, and having tasted that power, they are not

[1] ANC, National Consultative Conference, June 1985, Commission on Cadre Policy, Political and Ideological Work, Internal Commission Report, Commission on Strategy and Tactics, p. 17

[2] *Newsweek* September 16th, 1985

about to give it up"[3]. And you can also read that "behind the apparently aimless violence lies a desperate cry for help from a generation whose schooling has been intermittent and inadequate, and whose future looks bleak"[4].

The message, therefore, seems clear: get your children educated -remember that education is the best investment you can make-, raise them with good values, and especially, I would insist, make them appreciate the value of discipline.

BASICS OF PSYCHOBIOLOGY

The interplay, the feedback between science and 'the man in the streets', in adequate balance, is the marrow for survival (Genoves, 1992). A correct scientific information adapted intelligibly for laymen, therefore, is helpful for understanding ourselves and the organization that makes us dynamic living beings in continuous interconnexion with our environment, i.e., the brain and the most complex issues of its main functions, our behaviour.

A clear, simple and informal teaching on such a fascinating subject, although difficult to achieve -we are perhaps the most complicated living beings-, is indispensable for the understanding of the life. We human beings have to be persuaded about the important implications of biology to our lives and, consequently, we have to be fed information in everyday language, each according to one's different cultural level. This should encompass a comprehensive view about the most fundamental aspects of life, such as how we live, behave, feel or think.

"We live in a society in which the conditions of existence are such as to produce a continued mismatch between the potential of performance of the vast majority of mankind and their actual existence. Changing these conditions of existence demands actions at the social and political level" (Ross, 1973), and also at the educational one, and more specifically at the psychobiological, because in the analysis of the appropriate direction of change, the study of the working of the human brain has something to contribute. This leads to a concern with the factors that determine human performance, the psychic functions of the brain and how genetical and epigenetical factors, such as environment, influence the brain structure and functions of the individual. It urges, therefore, a recognition of the underlying biological basis of behavioural phenomena.

Among the implications of the relationship betwen biology and human life, is that all should know something about the

[3] quoted by J. Kane-Berman, Political violence in South Africa, Johannesburg, SAIRR 1993, p. 88
[4] *The Weekly Mail* May 17th-23rd, 1991

nature of aggressive behaviour, the roots of violence and the possibilities for its control. In order to cope with our present situation, we have to take our biological heritage into consideration although biological knowledge can also be used to justify inhumane measures. However, as Charlesworth said, "no knowledge is really safe against abuses, and still, knowledge is better than ignorance".

We have therefore to introduce the basics of psychobiology to the people, specially popularizing our knowledge on the biological and cultural factors involved in violence, and making clear what all of us have long come to recognize, that there is nothing in biology that stands in the way of making a world without violence and war.

CIVIC EDUCATION

The only permanent way to curb crime and violence is to instill in the younger generation positive values in which they can believe. This may be done mainly through considerable attention to efficient ethic and civic education, not only in the school, but perhaps even more importantly, through the correct use of the mass-media and political information.

Whereas in the short term the prevention of violent actions is urgently needed, the medium term requires 'educating for peace', and finally the long term demands the analysis of the possible structural causes and consequences of violence and their solutions.

In the short term one must try, obviously, to stop people participating in violent acts and to gradually lower the level of aggressivity in intensely aroused people. An emotionally stable environment and some loving care can go along way in lowering anxieties and curbing certain violence tendencies.

The socio-political leaders have a very crucial role in this task. They are the first who "need to show that we are disciplined and able to rule the country", as Archbishop Tutu said during the funeral oration for Chris Hani, the recently killed leader of the Pan African Congress, normally associated with the pro-communist so-called 'black left' . The leaders must be responsible and prudent about the use and risk of mass actions; avoiding the fostering of a climate of violence anc political instability, and advocating mass insurrection. They themselves confess that mass action is all-encompassing sometimes peaceful, sometimes violent: "at one moment the masses can be taking part in a placid demonstration o attending a mass rally; at another they could be erectin~ barricades and digging trenches to trap and fight enem~ vehicles entering the townships, or dismissed workers

can bt destroying factory machinery or burning crops, or the people can be physically attacking the enemy's agents and collaborators" (Kgope, 1990, p. 35).

But even the "peaceful" demonstrations are risky, given the difficulty of controlling crowds, though I understand they may be an important part of the democratic process. What one must try to avoid is giving irresponsible speaches which fuel outbursts of violence or inflamatory remarks calling for revenge, such as Winnie Mandela has done, telling the youth to take over the country -"we must hit back"- after Rani's assassination, or, at the other political extreme, the slogans of the ultra right whites -"You women must be prepared to shoot to kill"-. Slogans and chants frequent in black marches, like: 'War, War', 'No more peace', 'Kill the boer, Kill a farmer', or 'One settler, One bullet', must also be dropped. Their good-sense should be enough to realize that telling the people to articulate their sentiments, hopes and frustration aggressively, exacerbates violence and creates new tensions and anger and therefore contributes to a spirit of ungovernability and anarchy which will not easily be overcome. When you have emotional and often uneducated masses, these slogans cannot be seen as politically excusable. They are not, and never can be.

On the contrary, one should educate the masses and the youth in particular, in the fact that slogans must reflect positive ideas, such as commitment to rebuilding and restructuring the society. People must be encouraged not to take the law into their own hands, for example, by trying to eliminate the police; establishing 'self-protection' units; having 'cangaroo' justice, burning people in the middle of the street, introducing the necklace execution culture, which may take generations to eliminate, etc. Ideally, therefore, political groups and unions should be responsible for what their leaders say, and what their members do.

In the medium term, educational institutions, including the mass media, are very important in the erradication of violence and terrorism. They should stress the necessity of an ethical formation, an education for peace and an international understanding.

The increase of one's self knowledge and one's knowledge of others, enhances the erradication of hostile stereotypes thereby reducing phobias between different populations and leading to tolerance and the rejection of all forms of hatred. This mutual acceptance of one another, everyone with their own peculiarities and differences, can help one from bearing malice towards former 'enemies'. The sparking of blood feuds, tribal antipathy or local turf wars are thus avoided and enemies can become friends, despite bitter memories or the legacy of ethnic hatred. The more the

cultural sensitivity of a population, the more likely chance there is of tolerance towards the unfamiliar.

Schooling has to be designed to inculcate the population with all kinds of human virtues, with an especial focus on forgiveness, the will not-to-avenge, the control of bitterness, tolerance and comprehension towards old enemies, avoidance of the polarization of ideas such as equalizing 'adversary = bad', and so on. This spirit of solidarity and co-operation has to overcome the feeling of fear that still seems to be present in some situations, such as the relationship police-community. Patience and perserverence have to be applied until eventually the police are seen to be community friendly. But this first means that the police must at all times act in the interest of the whole community, not only of part of it.

It is advisable to opt for a conciliatory approach, preaching reconciliation instead of advocating revenge or intransigence. Even if competing interests will always exist throughout civil society, they should be solved via dialogue and compromise, avoiding extreme attitudes, using reconciliatory tones and showing readiness to negotiate. A negotiating culture is needed everywhere to find pacific solutions, or in its absence, peaceful arbitrations, which is always infinitely preferable to resolving problems by a hard-Iine approach. Submission through force may well increase the risk of even bloodier confrontations. An example of strong-arm methods is the Israeli army tactic of razing homes, riddling them with gunfire, grenades and, if necessary, flattening them with TNT, as a policy of collective punishment. To some, it seems to be highly effective -it ensures that no one inside remains alive-, but it is also raising hatred. These operations, euphemistically named "pressure systems", feed the Palestinians with anger and they may well explode later, especially because they feel they have nothing to lose. The armed struggle is often founded on the feeling of "nothing left to lose". We have more to loose by fighting each other than by getting along.

An important point is that what we may call a culture of discipline has to replace the 'culture of defiance', now days predominant among the youth. Reason instead of passion has to be the motor of our actions, as pointed out by Robustelli in this same conference[5]. We have to practice self-control by remaining balanced and staying calm and by curbing emotions which may threaten the hopes of peace-Ioving people. We have to dominate our own instincts and show respect for human life and dignity, accepting with chearfulness the others' right to be different. More cultural sensitivity has to be fostered, indeed, avoiding the tendency to impose the same thing on

[5] F. Robustelli (1993) "Rationality as an Alternative to Violence", 14th C.I.C.A., Cape Town, August 28th, 1993

everybody. F.ex., the trend of some people to impose an unnecessary eurocentrism, forgeting that what might be good or useful for people in Europe, is not necessarily good or useful for people of other cultures.

Another interesting comment by the rector of the Peninsula Technicon in S.A., Franklin Sonn, of the against the temptation to exploit 'victim status', which "will inevitably breed dependencies that will only compound this problem and render the oppressed impotent and disempowdered". By regarding themselves as victims, two dangers are created: selfpity perpetuates degradation; and the exploitation of victim status demotivates people by encouraging a sense of entitlement. The oppressed, concludes Sonn, "do not need upliftment, we need to do things for ourselves"[6].

One must also not forget the adults who should be encouraged to increase their level of education. It is as important as for the children because for various reasons, they probably have not had many opportunities previously and this has led to a very low level of education. Educating the adults not only increase their prospects in life but through them it is easier to educate and discipline their children. Bearing in mind the extreme deviance of some of todays' youth, the education of the adults is needed to inculcate in the children the main social and civic principles necessary for living in a peaceful and prosperous society. This is especially useful in cultures, like the African ones, where authority and respect is still a privilege of the older people.

Besides the ordinary school system, other appropriate vehicles have to be found to help propagate this civil education, such as the mass media. Also given the particular circumstances of S.A., any other traditional way of communication, such as song, music, dance, drama, art... could be useful for this purpose. I remember a dictum I learned in Germany during the years I was living there, working on my doctoral dissertation: *Bösse Menschen sing nicht Lieder*[7]. If we would dance and sing more often together… instead of violence, *otro gallo nos cantaría*[8], as we say in my maternal language.

INFLUENCE OF MASS MEDIA

The mass-media has a very crucial role in civic and political education, and more specifically in the prevention

[6] F. Sonn (1991) Paper presented to SA Conference on Negotiations and mediation in community and political conflict in SA, held at the Peninsula Technikon, in Cape Town.

[7] "bad men don't sing songs"

[8] literally, "another cock would sing"

of violence. Very often the mass-media creates public opinion, thereby determinating and conditioning a great deal of what ordinary people think and say, especially when their critical capacity is low.

In February 1976, when I gave my introductory address as a member of the Sociedad Española de Médicos Escritores[9], I pointed out that whereas biological manipulation is mere science fiction, cultural manipulation is a real danger. Rita Levi-Montalcini, Nobel Prize Winner of Medicine 1986, in a Conference organized in the Vatican City by the Pontificial Academy of Sciences on Genetic Engineering in October 1987, reiterated the same idea stated by me some decades ago: "I am more concerned" -she stated- "by cultural manipulation than by a genetical one. The alarms against the latter is much greater than its true danger. We are in danger, however, of being culturally manipulated, particularly with the increase of the mass media and with the propagation of information which may distort the brains of the youth, directing them to decisions ethically not aceptable". Cultural manipulation then is possible, and its spread is mainly by the mass media.

The philosopher Karl Popper, talking about television, says that "it has an enormous power on human minds", and emphasizes the convenience of a certain self-discipline in TV-producers, especially when the programs are oriented towards children, because "a TV without rules is provoking the moral corruption of humanity".

The mass media also has a great political influence and is often known as the Third Power, which may act as a counterbalance to political power. As a clear historical example of its power and the inutility of absolute political control, you may remember the situation of Persia under the Shah where there was no political control of the mass-media. And if you want another more actual one, just look what is happening in Nigeria this very week[10]: its military ruler, general Ibrahim Babangida, who seized power in a coup eight years ago, has, among other reasons, been forced to quit under pressure from a well orchestrated press campaign. Given this power which is quasi-omnipotent in closed societies or in totalitarian regimes and the huge amount of information available, the directors of the mass media need to be responsible in their selection of the news and the application of the necessary ethical criteria.

Focusing on the field of violence, its presence in the media is ubiquitous, becaming increasingly frequent and intense. It is often shown as a useful means of airing personal grievances, of righting injustice, of acquiring

[9] J.M. Ramirez, (1976). "La robotización cerebral", *Revista de Psicología General v Aplicada* 31: 449-469
[10] August 23rd, 1993

desirable objects, or of indulging sadistic pleasures[11]. The mass media can help in the civic education of the population by reporting the facts accurately and responsibly.

Their first duty is **accuracy** in the information, presenting the news in an unbiased and comprehensive way, without distorsion, manipulation or uncritical coverage. There is a real danger of disinformation and misleading, one-sided and simplistic reporting with disregard for the principle of hearing both sides. Dissemination of unverified information and rumour and reference to eyewitnesses as if it were enough for gi ving an impression of veracity are also frequent. . Inaccuracy is also possible by omitting some contrary information, according to ones political bias, or ignoring some topics considered taboo. This omission can be intentional or an oversight or even a result of intimidation. An example of intentionality may be when black leaders, organizers of class boycotts in Soweto, send their children to private schools in white areas (Mazwai et al., 1991, p. 14).

The second duty is **responsibility** in the selection of news and information and in avoiding the danger of spreading tensions or exacerbating confrontation. The mass media are not supposed to be garbage-producers or a mere reflexion of the garbage produced by the society, even if unfortunately, it is what people want to consume and they eagerly await its showing on television. But instead of becoming an indiscriminate rubbish dump of society, the mass media should rather act as a recycling factory, helping society to learn from the reported events and stimulating their thoughts and opinions. Let me give several examples which may clarify the need for self-control in the selection of news or in the way it is reported.

I) All psychologists know that **suicide** is a contagious phenomenon, especially among depressive people. Last year, a French boy imitated a 'cocktail' described in the famous T. V. serial starring Mc Gyver and thus succeeded in blowing himself up. His mother is now sueing the French T. V. channel for inciting violence, but of course it is too late to bring her son back to life. Also, a few months ago, Spanish TV dedicated ten minutes of prime time to show the suicide of a 16 year old girl, Gabriela, who jumped to her death from the seventh story of a Sao Paulo office building; they repeated the tragic images four times! Even more recently, Wald Disney Corporation decided to cut some scenes of its last film "The Program", which began to foment suicidal bets: some drunk students, players of an American football team, show their alleged courage by laying down in a row in the centre of a road in the dark of the night. The more time they last in that dangerous situation, the more "brave" they consider

[11] see *1993 Report of the Guggenheim Foundation*, p. 31

themselves to be. The first week of projection of this irresponsible scene led to an imitation which produced two deaths and several injured youngsters by cars. Enough said.

2) **Danger of TV intoxication**, especially in children: TV has become the main means of distraction for children. There are millions of children watching TV daily. According to the Spanish Association for TV Watchers and Radio Listeners (ATR), 96% of them watch an average of 3'30-4 hours/day, even though a study by the European Society of Biosociology (1991) considers that a child should not watch more than 50 min/day.

The ability for imitation is amazing in children of 12 years and younger because they have not yet developed a sense of wrong or right, nor the criteria for distinguishing between good and bad, or between fiction and reality, or real and illusionary images. Children are more imaginative than rational and, consequently, they are very manipulable, especially by the mass media such as TV, with its high suggestive capability. A recent enquiry in Sweden, for example, has shown that 40% of children between 6-10 years of age believe that in humans death is an exclusive result of being a victim of homicide. That's what children gather from an excess of violent scenes in TV: assesinations, robberies, kidnappings and other scenes inappropriate to their age, are habitual in many films shown during prime time for children. Even 70% of cartoons show violent scenes. In the United States, according to the National Coalition on Television Violence, the number of violent acts in special programs for children are higher than those shown in adult programs. The children program with highest amount of violence is the serie X-Men with 71 violent acts every half hour of emission, followed by The Ninja Turtles with 63. And this trend is an increasing; for example, the chain ABC is showing now twice as many violent acts as in 1991.

In Spain, a child in a week watches an average of 878 fights, 670 homicides, 420 shouting, 32 kidnapings, 30 tortures, 18 drug consumptions, 11 suicide attempts, 8 suicides. . . , with a total of 12.000 violent actions during a year of TV viewing. In a document on television influence issued by the Vatican, it was calculated that at 8 years of age, children have already seen about 15.000 homicides on TV. These figure alone are sufficiently elaborate and frightening not to need further comment.

It is not surprising therefore to find in the news several tragic cases of imitation by children. In the U .K., two ten year old boys, fascinated by violent films, recently murdered a two year old, James Bulger imitating Chucky, a "doll murderer" who quarterized children in the film "Devil Doll Three". The McDonald's massacre in Illinois, is another infamous example: a rampage that might have been a copycat massacre. The killer, a teenager referred to several

celebrated mass murderers, fascinated by them. A year earlier, five youngsters kidnapped, drugged with amphetamines, raped and finally killed a girl named Suzanne Capper. Three children kicked a beggar to death in France, and so on.

Those previous comments may suggest that television is a source of maltreatment of children (Eron, Huesman, 1987), even though there is no clear support for the theory of the causal effect of the amount of TV violence viewing and aggression (Lynn et al, 1989). Positive interventions tend to mitigate the psychological effects that TV violence watching has on young children. A combination of cognitive and behavioural approaches are most promising, even though aggression being a problem-solving behaviour is very resistant to change (Eron, 1986).

Could such portrayals also make adult viewers more likely to commit violence. Dolf Zillmann of the University of Alabama's College of Communication, is exploring this issue simulating long-term exposure to media violence. He has already studied the effect of gratuitous violence on attitudes toward violence as a means of conflict resolution. The results show sex differences: women are unaffected by prolongued exposure to violence. Men, by contrast, are clearly influenced, although not uniformely, but rather depending upon personality traits. It appears that men who are somewhat callous and insensitive already, are more likely to be influenced in the direction on endorsing violence.

3) The fashion of the lunatic fringe of the **talk-show** spectrum, at least in Europe and America:

a) The ‘reality shows’, in which the protagonist is always human suffering, often go beyond what is considered normal respect for the people concerned. Tragedies and macabre scenes are shown on TV in full detail, with the bodies of people killed in car accidents or in terrorist explosions. Futhermore, under the pretext of being in the interest of society, all sorts of deformities, violations, illnesses and tortures are inflicted on an undiscriminating audience which eventually loses its sensitivity to any sort of happening or horror. This abuse of human suffering, besides showing a clear lack of respect to the dignity of those persons and their families, can facilitate violence and is a very good example of what you are not suposed to do. Excessively "peppered" violent crimes in films, reality shows or even the savagery of the crimes that fill the news, watched by insufficiently mature people who do not distinguish clearly reality from fantasy or fact from fiction, help promote the idea that violence, blood and death are the 'daily bread’ of our lives.

Although it is not usefull to show only the negative side of life, it does not mean that you should never deal with human defects and suffering. Rather, you have to do so with delicacy and with real understanding. A nice example of this recently was the photos of Lady Diana Spencer shaking hands and touching lepers in Zimbabwe, which helps to spread the idea that those unfortunate people should not to be treated as social outcasts.

b) In 1991 the Anti-Defamation League counted 57 different 'hate shows' across US, most of them hosted by extremist groups. Even though the audience for these crudely produced and reasoned programs is relatively tiny, their message is quite virulent, triggering animosities and harming intergroup relations. Two opposite examples: Herbert poinsett, an unabashed neo-Nazi, in his *Race and Reason* show rails against everything from the Jewish-controlled media to 'black bucks' taking over America, which "is becoming darker and dumber every day", In the another extreme of the spectrum, Ta-Har, a self-described high priest of the Black Israelites, in his *It's time to Wake Up* show delivers prophecies such as "We're going to be beating the hell out of you white people..., We're going to take your little children and dash them against the stones"[12]. I think no comments are needed.

HOW TO DEAL WITH TERRORISM

The responsibility of the media also extends to terrorism. Terrorism is a multifaceted phenomena emerging from religious, ethnic and political conflicts around the globe. According to the Pinkerton Risk Assessment Services during 1992 about 5.400 terrorist attacks were committed worldwide, with more than 10.000 people killed. It spans a spectrum from state-sponsored attacks to individual acts that straddle an illdefined border with plain ordinary crime. The traditional oldstyle terrorism was usually politically motivated, tightly organized, centrally directed and often state-sponsored, with weapons, training, money and safe havens or sanctuaries provided. Nowdays this kind of terrorism is being substituted by a new-style, free lance terrorism which is ethnically and religiously inspired. It is less organized and less structured, more descentralzed and not really controlled or directed by anyone, but rather spontaneous. Even if operating with some coordination, it seems to be more a product of individual inspiration which makes it more implacable, unyielding and difficult to predict (see, among others, Groebel & Goldstein, 1989, in this CICA series; McCauley, 1991; Rubin, 1992).

[12] *Time*, June 21st, 1993

Terrorism is based on an **unreal and subjective persuasion**. Unreal persuasion: the terrorist is always portrayed as the victim. His message is always the same: the use of force is the only recourse to justice - as no one takes notice of our rightful pleas, we are left no alternative but… Manifestations and strikes proclaim the idea that they have "a right to everything instead of asking or negociating. This persuasion is also subjective, as they are convinced that they possess the truth, without questioning their choice of criteria or its objectivity or validity. This rigidity of will leads to extreme and often unethical positions which lack rationality and which make dialogue impossible. This, in turn, makes them feel misunderstood. What a paradox, the very people who deny life and liberty to their victims want these same qualities for themselves (Revel, 1987).

The mass media has an important role to play in the solution of this phenomenon of violence, given its enormous multiplied effect. We are faced with a problem that requires special prudence and responsible care by journalists: namely what to do with 'the mesage' of the terrorists which is really the purpose of the terrorist's actions. Is it convenient to divulgate their atrocities, or is it better to being silent about their terrorist actions denying them any echo at all in the media?

One of the principal means used by terrorists to achieve their goals, is the spread of a fear psychosis resulting from threat with its consequent social harm. The quintessence of terror involves no violence at all; all that is required is intimidation, a gentle reminder of what happenned in the past to ensure compliance in the present (Kane-Berman, 1993, p. 35). The media can either work to erradicate terrorism or they can act, often inadvertently, as a go-between between the terrorists and those on whom they are trying to bring pressure, a means whereby the terrorists gains publicity for what they are doing or their ultimate goals. If every terrorist crime is a means of selling the 'terroristic goods', the mass media itself, when broadcasting the act, is often converted into their best agent of publicity. To what extent does the mere act of appearing as a headline in a newspaper or on the TV screen increase the possibility of new terrorist acts? Does such news influence the way of behaving and the attitude of the audience, or even political decisions? One of the main reasons for the rapid propagation of terrorism is precisely its success in obtaining massive publicity through the mass media.

Interference on the part of the political authorities by imposing silence on information is not advisable, even if we are considering crimes as horrible as we are mentioning here,

provided the media do not infringe two conditions[13]: a) it must not hamper or harm the authorities' action; and b) it should go no further than the right of information; f.ex., by propagating views interpreted as an apology for, or incitement to terrorism.

The freedom of expression is a fundamental right.

A possible solution could be an informative silence imposed, not by the authorities, but by their own professional ethic. Would it not be better to sometimes censor terrorist's actions and messages as far as it is possible, instead of excesive and untimely information? I quote two cases from my own country:

First example: years ago a list of maximum tax payers of Spain was published as a sign of 'transparence'. This gave the terrorists the clue of who would be a worthwhile candidate to kidnap. Sure enough, one man on the list, Luis Suñer, a bussinessman practically unknown by the ordinary people, was kidnapped.

Second example: the early scoop by the local TV of the information on the detention of Santi Potros, a well known member of the Basque terrorist group ETA, probably raised the alarm and enabled other terrorists to escape. Let me read you a report from a Spanish magazine: "It was a few minutes after three in the afternoon -time of the news- when some civil guards arrived at the house of one of the members of ETA whose name had been found on Santi Potros a few hours before. On opening the door and seeing the police, the suspect surprising inquired if they were there because he had taking part in a demonstration. The police replied: 'haven 't you heard anything?' 'Well, no!', said the accused, 'my TV set broke down yesterday and I havn't seen any news'. In other flats the police didn 't have the same luck. In some they found the table laid and the food half prepared in the kitchen, but the news on T. V. had alerted the tenants and they had managed to escape before the police had time to arrive"[14].

I quote this example as black outs of certain information involving the police may not be understood by some journalists or the public and thereby seen as a violation of the freedom of expression. Also, I can imagine how difficult it must be for a reporter to keep quiet when he has a scoop of this magnitude and has to fill the headlines. We all know the expression good news is no news…; and no one doubts that violence, expressed in all its gory detail, is the most commercial product whether we are talking about the cinema, TV or newspapers. Sometimes there is even a boomerang effect

[13] According to the 34th plennary session of the European Committee on Criminal Problems (1985)
[14] *Epoca* 135, November 12th, 1987

when the media condemns violence and at the same time overexposes it.

Bearing in mind the practical difficulties, however, I wonder sometimes about the suitability of prudent self control that encourages the authentic freedom of expression. How can a reduction in the use of the mass media by the terrorists be achieved without interfering with the freedom of expression? I only add, just as a reminder, that a responsible freedom means much more than a mere fulfillment or satisfaction of personal interests, especially if it is done at the expense of other people's freedom.

Other experts, however, seem contrary to this self censure of the journalists. They say that terrorists would commit even more brutal crimes just to prove that they still exist. They argue that the possible peacemaker function of mass media would be better achieved giving accurate information on the terrorists' planned actions, in an attempt to show that no matter they do, they are always under observation and police control. It might be convenient to chastise the terrorists -and those who endorse them- by making sure that the picture of the dreadful human drama they have created, will live with them until the end of their days.

Basing his arguments on this theory, Robert Pandraud, French Minister of the Interior, made some interesting remarks during a visit to Madrid: "the ambition of all terrorist movements is to create the impression they can strike where and when they like. We have to give the opposite message, namely that our security system will not allow them to do this". The media can collaborate in this type of message. F.ex., the TV in Ulster emits institutional advertisments asking for the collaboration of the citizens in the fight against terrorism; in Germany, the police post pictures of terrorists all over the country offering rewards for those who lead to t rather like the legendary WANTED sign in the West. Furthermore, by increasing civil awareness they can be shown how the same information can attempt to frustrate the terrorists' aims rather t them. In a recent bombing in London -over a ~ units did a fantastic super human job to have tt open for bussiness as usual on Monday. The ill their lavish praise showed the terrorists that the and order would and could overcome everything people would not be intimidated by their acts.

EDUCATION FOR PEACE

How can we specifically plan an education for peace and international understanding? The rich experience of UNESCO offer us several suggestions for teaching programs. They should be integrated into actions for peace and justice in

which young people are already involved. After all, people learn more from experience than they learn from reading, listening to lectures, or preparing for examinations.

1) Listen to and learn about the values and concerns of young people. Most young people already believe in the values on which a vision of peace can be constructed: understanding and respect for all peoples, cultures, civilizations, values and ways of life; awareness of the increasing global interdependence of peoples and nations, and the need for international solidarity and cooperation. Most young people are afraid and angry of the threat of war, violence, and injustice.

2) Young people welcomec the opportunity to share in the creation of an optimistic vision for the future. We can help them to remove the myth that war is part of human nature, and work together on the creation of a vision of peace for the future.

3) Encourage action. Aware not only of their rights, but also of their duties, young people are ready to participate in solving the problems that face their community. By taking part in action, they can put their values into practice and express their anger in a constructive way and develop courage by taking part in constructing the future.

4) Tell students about actions for peace done by diverse role models.

5) Encourage them to work together and develop their abilities to communicate with others. Fortunately the human species is even more capable of cooperation than aggression.

6) Help young people to integrate their work for peace with every other aspect of life, with their families, communities, religious affiliations, and their work relationships. This task will take years to accomplish.

7) Help them to develop a global perspective and solidarity with people throughout the world and integrate it with the loyalties to nationality, ethnic group and family, showing them how the enemy image is an artificial construction, and not a constant human trait[15] (see also Carlsson-Paige, Levin, 1992; Hicks, 1988).

CAUSES AND CONSEQUENCES OF VIOLENCE

In the long term, violence can be overcome by analysing the **structural causes** and consequences of violence, and their

[15] Recomendation concerning Education for International Cooperation and Peace; and Education relating to Hun Fundamental Freedoms, Paris: UNESCO 1974.

prospective solutions and by an adequate sociopolitical education on different levels. Real peace is not possible without justice, constant effort and hard work all necessary in solving the problems of society. This education should be specially directed at the future leaders of the country.

If the nature of violence is complex, the analysis of its causes is even more complex. An 'on-off switch' theory of political violence argues that it is orchestrated to the benefit of the government and is subject to control, being switched on or off at key moments. Chris Rani, for example, said this[16]. To assume that groups of people could simply be incited to violence at certain times and then just as simply persuaded to be peaceful at other times is too simplistic to be true. It ignores the phenomena of counter attacks, cycles of violence, score settling and other human factors inherent in the conflict. Who say violence is switched off when De Klerk travels abroad, f.ex., fails to consider his projected visit to Expo 92 at Seville, aborted by the Boupatong massacre.

There are also those who suggest that the continuing violence in S.A. may be a product of a deliberate destabilization programme, orchestrated by the government via senior levels in the security establishment as a strategy to destroy the opposition. It is known under the term Third Force theory and claims that the trouble is fomented by the police in order to sabotage the transition (Ellis, 1992, 1993). According to a Black Sash document on the Natal violence (Truluck, 1992), f.ex., low intensity conflict is deliberately being used as a strategy by the security establishment, in agreement with international military theory. They have tried to document it noting how time after time, horrific events such as a massacre, regularly take place just a few days before an important meeting or significant negotiation. This strongly suggests that there might be a deliberate attempt to sabotage negotiations.

Some others (Jeffery, 1992; Pereira, 1993) claim that there is no evidence for a theory that suggests the police might be spreading violence. Goldstone's Commission has also found no evidence to substantiate these allegations of complicity. DeKlerk (1992), while admitting the involvement of a limited number of security force members in illegal activities, has denyed the existence of any Third Force.

Despite the fact that it may be accepted as plausible from a political point of view that the police may be a hypothetical factor in unleasing the violence, it is however too simplistic to put all the responsability -or even a big

[16] *Finance Week*, September l7th-23rd,1992. This theory is based in part on reports issued by the Community Agency for Social Enquiry, and the Human Right Commission [see *Race Relations News*, February 1993, p. 9]

part of it- on their shoulders for the violence ravaging the country, as Nelson Mandela told Radio Zulu listeners some days ago.

The real causes of violence are many and complicated. This same very prominent S.A. political leader exposed the main ones very clearly in his speach at Chris Hani's funeral: "We want a nation" -he said- "free from hunger, disease and poverty, free from ignorance and humiliation; a country in which there is peace, security and jobs". And he concluded insisting on the need of working together to reduce unemployment, to prevent disruption of education, and to address the problem of marginalized youth. Here you have, therefore, some of the main structural causes of violence in SA: economical, social and political imbalance, and obviously lack of education, besides the underlying historical brutalities of apartheid, accepted by everybody, with few exceptions.

The once mighty SA economy is starting to show signs of wobbling and decline. A capital-starved economy cannot absorve a fast-growing work force. Jobs are disappearing quickly, especially for the unskilled. Half a million jobs have been wiped out by recession and drought, not to mention the negative influences of violence. Black unemployment is running at close to 50%[17] -seven million people unemployed-, and 60% of the population live below the breadline, 25 people a day die of tuberculosis and 300 a day become HIV positive[18]. It means a situation of real poverty among the black population. No wonder violence is generated. Jobless people without their most elementary needs covered, have nothing to loose and nothing better to do. They, the marginalized people, are being manipulated in the present negotiation process in this country.

Even if an unequal distribution of resources has always being historically present in South Africa, this violent competition of an impoverished underclass for the scarce resources in urban areas, has massively increased. This pressure is characteristic of the present rapid urbanisation occuring here, as well as a rapidly increasing population. Violence, therefore, is partially rooted in socio-economical factors, as poverty, squator, and unemployment. They must not be neglected.

There are also other socio-political factors facilitating violence. F.ex., the deeply rooted corruption that exists among the leading class. The atmosphere of intolerance, intimidation and political rivaltry within the black

[17] The Reserve Bank in its 1993 annual economic report gives the fignre of 46% of SA's economically active population is unemployed

[18] Data presented by Prof. Franklin Sonn to a conference on Negotiations and Mediation in Community and Political Conflict in SA, at the Peninsula Technicon (1991) [see *Race Relations News*, February 1993, p. 4]

community is rampant. Their own black newspapers state: "the stoning and burning of people is becoming almost fashionable among blacks"[19]. Coercion to enforce boycots, and resistence to it, may also be partly causes of black-to-black violence. The often suspicious perception and hostile attitudes of large numbers of people toward the security forces, notorious for their strong-arm methods; and the police, sometimes implicated in wrong doings and brutality which may have resulted in fatal incidents, are portrayed as their enemies and considered as legitimate targets for attack. This is reflected in the slogang kill a cop a day. Also many dwellers don't seek police help and protection because of fear of reprisal. The abuse of instruments of oppression is condemnable, whether it comes from the government institutions –the so-called institutional violence-, or it is used by other oppressed factions.

The armed struggle, besides sparking an unwanted wave of retaliation with continuous vicious circle of attack and counterattack, has very little chance of becoming the real solution to the problem. And the same must be said about the strategy of ungovernability and insurrectionary tactics to topple the state incited by some political organisations, which only causes a dangerous lack of discipline with massive disruption to the lives of innocent people and possible persistent anarchy making the country ungovernable under any future rule.

Another main cause of violence which we have been refering to during this talk, is the lack of education, or even more precisely, the wrong educational policy which favoured the removal of moral constraints from human behaviour. No wonder youth are endowed with such a violent culture.

What can we say about the direct consequences of the real violence in South Africa? Some people live a life of continuous fear. First, this leads to the ""brain drain"', highly skilled people who move abroad in search of a more appropriate and sure environment. And second, it stops foreign investment in SA: As investors are scared off by violence, they became more cautious and adopt await and see attitude. Even more, since money is involved, they prefer to invest in other places which offer a sound economic policy with a low risk profile. That's the crude reality. Today developing countries and even developed ones, have to compete for investment finance. Violence, therefore, is threatening the order of a once productive society which is fast disintegrating into a country devided by hatred and heading for self -destruction.

[19] *Sowetan*, April 12th, 1985

But from an optimistic prospective, provided violence and anarchy are overcome, forecasters see the glimmer of a recovery. This country has above average financial structures, an infrastructure and an administration that still works, and an enviable entrepreneurial capability and knowledge. A recent report by the Reserve Bank maintains that the end of four years of recession is in sight. There is a gradual recovery in some major industrial economies and new large investments are projected. These are, of course, attractive to foreign investors provided there is peace. But, remember, there can be no development without peace, nor peace without development.

Once you know its main causes and consequences, all you have to do -if only that was so simple!- is to prevent the occurrence of violence. How to achieve this task? First, fulfilling the basic needs of the population. Second, fostering the trust between people and institutions and freeing them from fear. Third, changing the minds of ordinary people by convincing the population by all educational means that violence not only is erradicable, but also that it will solve nothing and reminding them that innocents are always the ones who suffer most. The ordinary people are traumatized enough by violence and they want it to stop. De Klerk said at the opening of CODESA, "if your leaders are talking to each other, there is no reason for you to kill each other". Mandela also pleaded not to avenge past violence because violent reprisals would only mean that more innocent people will be killed.

CONCLUSION

Throughout these pages I have tried first to show you that it is quite possible to overcome the endemic violence of this country, and second, to give some clues on how education may help South Africa.

This country is a reflection of a much larger world problem - an imbalance between the rich and powerful northern countries and the poor south, an educated elite and an illiterate majority, a declining rich population and an expanding poor population who lack capital, resources and skills. If you are sucessfull in your task, we can predict that SA will become a very attractive laboratory for others to learn how to cope with these vital issues, for really man's future of this planet is at stake. Your country could thus become a model not only in the economic sphere, with a useful co-operation between capital and labour, but also an example of how to cope with racial issues and multicultural education.

I am aware that the suggestions in favor of abetter and less violent world that have been appearing here, are not

easy to put into practice. To live with mutual respect does not happen spontaneously. Achieving peace is an arduous process which cannot be implanted overnight… It requires patience, hard work and dedication from all of us, multiplying our efforts, each one in his own province. But, if I am allowed to remind you a line from Ernest Hemingway's The Old Man and the Sea, "man is not made for defeat". Also one cannot afford the luxury of harping on the mistakes of the past, everyone will have to "pull his weight" if a positive New SA is to be achieved. Yes, to curb violence and to instil a culture of tolerance and goodwill is a difficult task, but it is not impossible. As the Statement of Seville (1986) says, "the same species who invented war is capable of inventing peace". The responsibility lies with each of us. And, as we say in Spanish, *ivale la pena!* It is worth it.

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14

PSYCHOBIOLOGICAL CONTROL OF HOSTILITY*

J. Martin Ramirez

Different scientific disciplines, each one with its specific methods, deal with aggression, since it is composed of inextrincably intertwined innate elements, environmental factors and learning and it can be observed on different levels, one can assume a certain continuum between the different disciplines, suggesting an interdisciplinary approach for the analysis of aggression.

Although considerable research on aggression has been stimulated by an effort to apply knowledge directly to the prevention of violence, and even if "the time is now ripe for social scientists to apply the results of our studies to real life problems of violence" (Feldman, 1982), in my own opinion the management of violence in everyday life is still relatively untouched.

The purpose of this contribution is to assert that aggression and war are not biologically unavoidable and, therefore, that hostility can be reduced and prevented (see also: Ramirez, 1978, 1994, 1995, in press).

Presenting aggression and related forms of behavior as being something innate or instinctive does not imply that it had to be something unavoidable, something to be necessarily elicited. This merely means that animals are equipped with neural and humoral apparatuses for particular fixed action patterns, and that these action patterns can be elicited by appropriate stimuli such as an instinct. Aggression is merely a potential which one does not necessarily have to apply. We need not accept aggression as a fate: "we shall not improve our chances of counteracting [intra-specific aggression] if we accept it as something metaphysical and inevitable, but on the other hand, we shall perhaps succeed in finding remedies

* In: J. Rotblat & M. Konuma (eds). *Towards a Nuclear Weapon-free World,* Singapur: World Scientific (1997). pp 646-648

if we investigate the chain of its natural causation" (Lorenz, 1963). **Aggressiveness is controllable.**

Aggression is only one of many possible biological techniques for compete over common resources, such as food and shelter, or limiting needs. It can be used 'as a last resort', but usually there are better alternatives. We do not have to be necessarily aggressive; hostility can be controlled. Other socially constructive behaviors which lead to mutual help [altruism], such as the sociability and disposition to cooperate, have likewise evolved and are as innate, natural and deep rooted as aggressivity could be. Even more, according to Richard Leakey (1987), **altruism and cooperation are prior to competition** in the evolutive history.

The fact that one possesses the capacity to be aggressive [presumably in part determined by heredity] does not imply that one must be aggressive and make war; consequently there is a real possibility of creating a peaceful world, however difficult the process may be. The conclusion is clear and precise: **there are** solutions and biological **alternatives to aggression and violence**, as the Seville Statement of Violence (1986) proclaimed.

How does one control and prevent the elicitation of aggressiveness? "Its internal physiological mechanism can be maintained under control by external means" (Scott, 1958) by:

a) **Reducing** its destructive elements and the level of **unpleasant** life **events** which may elicit aggression, i.e., its causing factors; f. ex., avoiding its expression by those who are already motivated for doing violent acts or for fighting because of lack of a vital space. Territoriality distributes the habitable space between individuals so that each one can participate adequately in the available resources. If these distances are reduced, aggressive impulses can arise, in a way similar to what is called 'repressed aggression' in humans (Wynne-Edwards, 1962).

b) **Avoiding its destructiveness**, i.e. avoiding that aggressiveness may turn to hatred ["only when there is an intense aggressiveness can love appear" (Storr, 1968)], and fomenting the expression of its more constructive aspects, fostering colaboration and communication between one another, through territoriality and inhibitory mecanisms, such as conventionalities and species-specific rites. Ritualized encounters, such as mere threat ceremonies or tournements, appeacement gestures showing submission and recognition of the victory of the adversary, f.ex. laying aside threatening weapons [beak, teeth, claws, horns] and displaying specially vulnerable parts of their own anatomy [abdomen, genitals, jugular; in the human case, bowing or hand giving], avoid killing and serious injury in conspecifics. These ritual

gestures are fundamental in what is called 'vinculant' behavior, which reorients aggressivity toward hostile neighbours, through peace making ceremonies which allow the recognition of the other as a friend [food or drink would be shared].

c) **Rationality**: whereas in animals built in inhibitions impede them from killing conspecifics, man is the only species who, lacking them, has to create those inhibitions by using his reason [in self-reflection] and social rules (Tinbergen, 1951). Although aggressive behavior can be affected by involuntary reactions, it can be controlled with the increased awareness of higher order cognitive processes.

An adequate way of dealing with some forms of real-life violence on an individual basis could be the application of a clinical approach [anger-management methods] to violence prevention: the cognitive restructuring of a violent person's perception of social events, and their relationship with others, can help in reducing aggressivity and hostility (Howells,1989). Haecker (1971) also suggests the institutional rationalization and ritualization of aggression, transforming free aggression into masked, invisible and unconscious aggression [internal institutions: conscience, character; external institutions: plays, rulers, norms, groups, organizations], which would be manifested only in very precise circumstances in the name of a superior legitimity, such as duty, necessity or self-defense.

It would be uthopic however to think that the mere application of our psychological, biological or ethological knowledge on aggression could have an immediate favorable effect on human social conduct, and on improving the problems of humanity. To thwart the occurrence of aggression often requires that the triggering factors disappear, and this is a problem that **transcends psychobiology** (nutrition, drugs, neurotransmitters) and enters into other spheres, such as political, social, economical, cultural… which often leads to the contradiction between political solutions and scientific proposals; and abuse in control, with the old dilemma: Quis custodiet custodes?, who should be whose custodian?

As a positive last thought, the way we ultimately consider human nature and the increase in knowledge about ourselves, must necessarily influence our own destiny, or -in words of this Pugwash Conference on Science and World Affairs-, our global governance, through tolerance, justice and peace, hopefully for the better.

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15

WAR IS BIOLOGICALLY AVOIDABLE*

J. Martin Ramirez

"If war can be thought of as a social illness, we might perhaps follow the example of Pasteur, Koch, Mechinikov and other pioneers of medical science and study the causes of war from a biological point of view". This consideration of John Avery at the present Pugwash Conference (1998) has suggested me to submit a summary of a talk I gave the last year at the Hebrew University of Jerusalem on how the Seville Statement on Violence developed. There, as you may know, it is stated, contrary to popular beliefs, that war is biologically avoidable.

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* In: Joseph Rotblat (ed). *Long Roads to Peace* Singapur: World Scientific 2001. pp 375-379

In plain words, the Seville Statement on Violence says that peace is possible and that wars and violence can be ended, making clear that there is nothing in biology that stands in the way of making a world without war. War is not in our genes, and we need not accept human aggression as a fate. As the Nobel Price winner Lorenz pointed out, "we shall not improve our chances of counteracting [intra-specific aggression] if we accept it as something metaphysical and inevitable, but on the other hand, we shall perhaps succeed in finding remedies if we investigate the chain of its natural causation" (1963). Far from condemning humanity to war, thus, biology makes it possible to end violence and the suffering it causes and, consequently, to achieve peace (see: Adams, 1991; Ramirez, 1994a, 1996).

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Achieving peace is not an easy task at all. This first step -peace is biologically possible- is necessary, but not enough. A second important step has to come. Once we know it is possible -it must begin in the mind of each person with the belief that it is possible…-, the challenge now is to counteract the prevailing culture of violence which has pervaded so many societies and to transform it into a culture of peace.

Within this universal and transdisciplinary task for constructing peace, scientists also have a specific role to play. First, we have to understand the problem and its possible solutions: to know what is aggression, violence and war, and what peace really means in its deepest meaning, as well as which are their interacting biological and cultural factors. A most effective means of understanding them is its systematical study, utilizing scientific techniques. For example, in our case, with a greater knowledge of the many causes of aggression, we can develop an appreciation of the possibilities for controlling it, as well as an understanding of some of the reasons why we have failed to effectively control it in the past, such as a lack of its appropriate definition and measurement (see: Ramirez, 1998). Here I will just say that biology and environment taken separately are never causes of anything in an organism's development. Therefore, the human brain should no longer be considered as a generator of possible -or even inevitably- occurring aggressive behaviour (with improper emphasis on some humoral factor or even single gene thought to be specifically implicated), but rather as the mediator of a dialogue which may take on an aggressive form for reasons that can only be truly clarified through joint multidisciplinary efforts.

For an adequate control of aggression we need a comprehensive approach, integrating different perspectives on violence, with an appreciation for the various various domains of science that are studying the development of aggression and -biology, learning mechanisms, social experiences… and what is more important, their dynamic integration, in an attempt to use science to guide society in its efforts to prevent and control harmful aggression. If we want to reach the ultimate goal of application of scientific information in the real world we can never separate them, because they are in constant and circular interaction.

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This brings me to a second major: we should emphasize the potential value of education, specially during the early critical periods of development, to provide a major contribution to the control of aggression, in the prevention of violence and in the achievement of peace, stressing the importance of a comprehensive and global education with a transdisciplinary approach. Since we would like to live in a permanent state of peace and well being, we have to lay down solid foundations to make peace education available (Ramirez, 1994b). Education becomes a preventative measure that informs individuals and caregivers about the causes of aggression: starting with pre- and postnatal health care, it would progress through the raising and formal education of children, and continue into adult social settings.

Besides the formal education, one needs to learn how to deal with emotion, how to transform anger and fear into love and compassion. The schooling the emotions is important, given the influenciability and moldeability of the feelings, especially during the early years. The affective education movement of the 1960's -psychological and motivational lessons were more deeply learned if they involved an immediate experience of what was being taught conceptually- has rather become the emotional-literacy movement of our days: instead of using affect to educate, it educates affect itself. Prevention programs are far more effective when emotional and social competencies are taught: such as impulse control, managing anger and finding creative solutions to social predicaments. Emotional skills have to be also stressed: self-awareness, identifying, expressing and managing feelings; impulse control and delaying gratification; and handing stress and anxiety… (Goleman, 1995).

Chronic anger is an habit that also can change through education: f. ex., teaching basic elements of emotional intelligence, particularly mindfulness of anger as it begins to stir, ability to regulate it once it has begun [substituting reasonable thoughts for cynical, mistrustful ones], and empathy [for frustrating encounters, you learn the ability to see things from the other person's perspective]. As Redford Williams says (1989), "the antidote to hostility is to develop a more trusting heart. All it takes is the right motivation. When people see that their hostility can lead to an early grave, they are ready to try".

Conflict resolution is another interesting point, which can be meliorated via education, learning the many choices for dealing with conflict besides passivity or aggression. Given the futility of violence, it has to be replaced with concrete skills. When tension erupts, you can seek out a mediator to help settle arguments that otherwise can escalate. You have to learn to think differently about disagreements, and to recognize an expanded range of feelings. And patience must become a habit, which will make us able to deal with life more 'peacefully'.

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We should never forget that peace is biologically possible and that, in order to influence our surroundings positively, we must learn to develop inner peace within our minds.

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16

THE HUMAN AND CULTURAL NATURE OF WAR*

J. Martin Ramirez

We can describe war as a **socially recognized form of collective aggression between groups**, particular to human beings, and **with** a distinguishing feature which is the **use of arms**. Although, in general, war normally takes place between different groups, nevertheless, civil war, in which brothers of the same family fight on opposite sides, also occurs, which in fact happened in my country not so long ago.

Although some, such as Charles De Gaulle, feels that war is more the result of a failure of politics and consequently concludes that it is bad, others, such as Clausewitz, who is said to be the ideological father of world war thanks to his theory about 'true war', sees war as the continuation *des politischen Verkehrs mit Einmischung anderer Mittel*, which is understood to be something intellectual and ideological through fighting body against body, in which one is able to use all the instruments made available by the technological revolution of the time. Clausewitz conceived it, therefore, as an instrument to achieve what one wants by force, but of course defined by regulative laws of conduct, such as its planes and its organization... From this it is gathered that the socially recognized form of armed war entails a series of 'gentlemanly' rules which tend to minimize the cruelties and the unnecessary spilling of blood through ritualization - armistices, cease fires and similar things and also the intervention of mediators between the parties fighting. Unfortunately, this ritualization seems to take place less and less, for in this day and age, war take place without previously being declared or even the existence of war is denied and in many cases, a peace treaty is not even signed in the end.

Perhaps the phenomenon of war is not only the most destructive form of aggression, but also the most provoking and characteristic feature of the human species. One of its

* In: J. Roblatt, R.A. Hinde (eds) *Eliminating the Causes of War.* Cambridge (in press).

characteristic goals consists in the destruction of individuals of our same species, something which does not usually occur in other species of animals, which, although they resolve discord in very blood provoking fights for their survival, their confrontations are usually limited by a certain innate inhibition: whose component feature seem to want to avoid serious danger between cospecifics, instead of causing death. Its main biological connection is also peculiar to our species, as it is, in effect, language which makes possible the co-ordination of groups, the transmission of language and the use of instruments which have to be used as arms, such as is noted in the Seville Statement on Violence. The conflicts between colonies of ants, wolves and monkeys, do not have these characteristics which are common to all human wars: they do not use instruments effectively, nor are their fights institutionalized in the strict sociological sense given to this term, nor, obviously, do they co-ordinate their conduct verbally. We therefore are faced with a type of social violence invented by man and which does not exist in other species. War, therefore, is distinguished clearly from other forms of intraspecific aggression and is **peculiar to the human species**.

The fact that war is considered to fall in the definition of aggression, nevertheless does not signify that it is caused directly by human aggression per se, nor that people have the necessity to go to war because they are biologically aggressive. Thus, in the first place, but without putting in doubt that war in itself is an aggressive act, **individual aggressivity is not the direct cause of war**. Robert Hinde excludes the idea that it is an expression of individual impulses, whether they be instinctive or not, on the grounds that all wars have an end and this is produced by certain causes, although not always sufficiently delimited. Given that nearly all the definitions of war include the imposition of harm of one on another, whether it is on the individual, group or national level..., it is suggested that the cause of war naturally stems from individual aggression, when, in fact, individual aggression only plays a very limited role in its development in relation to the to the behavior of the individuals who participate in it. In fact, not only aggressive individuals, but also pacific ones participate in war. How many times do the real motors behind a war, or moreover behind genocide, appear to be normal citizens, including being lovers of the most exquisite arts and being members of a close knit adorable family in other social contexts. Although it might be pushing the point, it is easy to bring to mind the example 'of the terrible' nazi general or of the 'hated' commissioner of the SS. Many of them might be considered among those who are socially most progressive, with their outstanding features being their concern for ecology or for the preservation of the species or for the well being of animals (they would be scandalized by the brutality of a bull fight); in addition they were the

pioneers in the campaign against tobacco and the most effective in the fight against cancer and the protection against X rays, or against overmedication, whereas they were not capable of seeing that they, themselves, were responsible for actions which were objectively so horrible. Moreover, when individual aggressivity is involved, this, more than the cause of war, is one of its consequences -the product of fear and frustration caused by the war: "human aggression does not cause wars -concludes Hinde- it is the wars which induce human aggression". The aggressive motive of the individual participates only indirectly in the war; it contributes in enhancing its public support.

In second place, people don't fight because they are necessary aggressive, but because they have to obey a series of received orders. In reality, the war is a conduct, which is highly institutionalized with all its variety of contributing roles: the soldier, the general, the politician, the doctor… And the fulfilling of each of these roles is determined in large part by a series of rights and obligations associated with each role. Thus the **soldiers do not act because of their aggressivity, but by discipline**; they are mere actors in an action whose true authors are the people who move the invisible threads from a distant institutional office. Their duty consists in acting like that within the institution of war, and the result will be, for the most part, totally independent of their eventual aggressivity or their possible hostile feelings. The problem consists more in specifying the forces that maintain the war as an institution, that is everyday factors in continuous action, cultural factors, such as the specific culture, religion, the group's social cohesiveness… The war itself is formed by a series of complexes, which are institutionalized: military, industrial, scientific… Nevertheless, war is somewhat more heterogenic than most other types of inter-group aggression in that several distinguishing features are involved: there is a greater differentiation in roles than a mere conflict between groups, there is a conflict between complex societies with many of the groups being intertwined and mixed.

War is a paradigmatic example of which the ultimate consequence of the differences between in-groups and out-groups could be. In effect, in this, groups participate which tend to see themselves as being superior to the rest. And consequently, any perceived threat against their group serves to start the aggression against the other groups. This explains, to put a recent example, the fibre of patriotism aroused in USA by their firm response to the threat of Sadam. The internal affirmation of a group, therefore, is able to augment the aggressivity to other groups.

Nevertheless, this vision of war as a form of **instrumental aggression between groups** whose chief function

is to protect and augment the genetic pool of ones' own group is not free of problems. On one hand, the dynamic tendency of the in-group to see themselves as superiors to the out-group, those that they don't value, has other possible alternatives to the aggression, such as it is known in studies of animal aggression on avoidance or dominance and submissiveness. But otherwise, and in accordance with the sociobiological theory in which the genetic pool will be more similar between genetic groups, war, although not inevitable, such as we will see later on, would be intimately related to the biological human predispositions, such as if the were an instinctive answer against the out-groups.

War therefore is a form of collective aggression between groups that has little relation with individual aggression in its proper sense. From that we can see that individual hostility or physical aggressivity are poor predictors of the attitude towards war. A much stronger correlation with the possibility and likelihood of a war, would be the nationalistic attitude.

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Is war something innate in human nature? Is man biologically predetermined to solve the world's problems by violent acts? Do we always have to have the idea of having war with us, such a fatal company, or is something really avoidable?

Never mind how deplorable it is, the existence of violence and more concretely of wars is an unquestionable fact. So much so, that a cultured English Lady at the beginning of the 18th century, Lady Mary Worthey Montagu, wrote in this respect " the custom has become that it is inevitable. There are those who effectively maintain that violence is part of the necessary order of things which fall into what is normally known as the theory of aggression as an exercise of power; for example Lewin accepts that the affairs of the world must ultimately be settled by violence. Something similar is also suggested by Karel van Mander when in 1604, remembered the artists "the famous saying about the circular ways of the world: peace leads to subsistence, subsistence to wellbeing, wellbeing to pride, pride to pushment, punishment to war, war to poverty, poverty of humility and humility to peace".

Others, on the contrary, tend not to agree this affirmation. Although they accept that the human being is biologically capable of violence, if it were necessary -he possesses some innate dispositions related with aggression, such as defense, dominance and territory; war shows such radical changes throughout time and space, such as in the nature of its military organization and the armaments used, that one is not able to say that it is something strictly

biological. The fact that man possesses the capacity to make war (presumably in part determined by inheritance) does not imply that he has to do so. **War is not a biological necessity predetermined by inheritance, but** an artificial product, **the result of the cultural evolution**, which disgracefully, is learnt too easily. The cultural evolution is able to lead us to war and even possibly destroy us, because science and technology are the main instruments, which have made war increasingly destructive. Its destructive character, therefore, is culturally developed, being at times the fruit of cold calculations and plans which are not being made on the ground, but by politicians who are far away, which appears to have occurred in the actual conflict of the old Yugoslavia. It seems therefore, that war is more a result of the cultural evolution than of biology.

Given that war is a cultural product, it is avoidable: it should be able to overcome it **culturally**. According to Richard Leakey, in the beginning the human species lived together in an agricultural society, in co-operation and harmony, instead of being one in competition: they were involved in recollection and hunting, with everything put to the disposition of all. This absence of the sense of private property still continues to be the habitual practice in our days of, for example, the bushmen in Southern Africa. The scientific investigations realized by Margaret Mead among the people of the Southern Seas also support the anthropological arguments in favour of a character merely cultural, and consequently, not inevitably, of war.

One of our most remarkable behavioural qualities would be precisely the cooperation shown by all primitive human societies during the collection of food and hunting. Most of the phylogenic adaptations needed to mold our behaviour were developed over long periods in little individual communities. Only afterwards, did the cultural evolution start to alter our environment creating an artificial world, not a biological one, in which appeared the spirit of competition and wars, with its nature, military organization and armaments used, changing both in time and in geographic localization.

This suggests that war might also be the outcome of greed. Where scarcity is perceived, real or not, in competitive societies, it can be sufficient to arouse fear, and often this is used as a motivating factor in justifying hostility. Something like this was used to arouse anti-Jewish sentiment in Hiltler's Germany. Hardly any other animal will take more than it needs when, for example, food is available. It is only humans in competitive societies, who will start hoarding and fighting over the spoils. This can be seen operating on a larger scale, in how America, in nowadays, will go to the 'defense' of one country but not lift a finger when it has no inherent riches which it requires or even

might hurt future business with an agreeding country, like, for example, the invasion of Tibet by China. Thus, the organization of the state has had a greater effect in changing the nature of war than its primitive biological roots, such as we can also observe in actual illiterate tribal societies in which there still is no concept of state.

Other authors correct this thesis that all primitive people are pacific and that only later the more developed cultures made war, pointing out that, even if some villages showed pacific ideas, others, on the other hand, are characterized more by their fighting spirit, such as we see today, for example among the aborigines in Australia and the 'negritos' in South America.

In some cultures, there are also terms for specific behaviors related to fighting. For instance, AMOK is a Bahasa Malay term, meaning "to engage furiously in battle" (Westermeyer, 1973). It has been identified in Malaysia, Indonesia & Thailand, and it involves wild, aggressive behavior of limited duration (usually among males) in which there are attempts to kill or injury a person. And BESERKER is a Viking word describing a behavior practiced just prior to entering battle (Leff, 1981). It is obviously related to AMOK. The terms 'running amok' and 'going berserk' are in common usage, perhaps because the associated behaviors also occur in other societies.

Our own present everyday life has shown abundant episodes of violence or unpleasant sentiments which reflect confrontation with our own neighbours, which are much more aggressive than those eventually found in any primitive society. Moreover contemporary society is characterized by its excessively competitive nature, where competition plays a fundamental part in achieving individual goals and aims. Although this is a fact, it would also be unfair not to add that our social life is directed by a spirit of cooperation and good neighbourhood which thus can be considered one of the main social virtues of present day society; and friendliness is equally one of our most appreciated characteristics.

Thus, wars always have been an expression of the culture of a society, and have developed in some of them to be the most characteristic of that culture. Thus we talk about warlike societies or pacific societies, or in an apparently similar mode, authoritarian or democratic societies. And we say apparently because, if you allow us to make a digression which one can note with interest, in opposition to the general belief that democratic societies are less warlike than other political regimes, a detailed analysis of the military conflicts which have occurred during the ultimate centuries, permits us to conclude that, although it is true

the democratic regimes don't normally fight one another, democratization itself tends to create military conflicts. Nations in the process of democratization demonstrate a greater probability of participating in warlike conflict that stable regimes, democratic or not.

Nevertheless, other factors also influence social violence such as the identification as belonging to one group with its consequent discrimination and prejudices respect to others, the eagerness of leadership, the formation of stereotypes, propaganda, stress..., as well as aggressivity

Let us end with the memory of the famous correspondence of Albert Einstein with Sigmund Freud, asking him about the roots of the apparent choice of humans for war and the possibility for changing this human comportment which is so destructive. It is worthwhile remembering the answer of Freud: war is the manifestation of an impulse of aggressive instinct, exacerbated by the role of leaders which forment it, and by other social factors. And in regard to its possible solution, instead of sublimating it (changing the expression of aggressive impulses in a social acceptable form), which is so present in psychoanalytic thought, Freud suggested the need of change in two areas: a) an increase in human intellectual functioning; if we were more rational we would be able to find alternative solutions to conflicts; and b) the existence of psychological power which would serve as a dissuasion, because rationality is not enough, as in some cases it actually causes wars because of the reason of 'national interest'. And from this, it is convenient to flee from nationalistic sentiments, increasing positive feelings towards other national and ethnic groups.

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To sum up, war is not in our genes; the prevailing culture is the main cause of war. Even though the cultural evolution might lead us to war and even possibly destroy us, as science and technology are the principle instruments which have made war more and more destructive, given our nature which is capable of cultural change, we have the ability to adapt culturally to this world. It is really possible to make a pacific world, even though it will not be easy, because, as the Seville Statement on Violence says, there is nothing in our biology, which says how to make a war free world.

But the problem of war is not solved by just considering ourselves pacific by nature and by simply excluding everything that contradicts this conception. To avoid unnecessary war and self-destruction and to achieve peace, it is convenient to focus and design other non violent means, alternative to the use of arms, which permit a solution which is more intelligent and effective than the existing problems in society instead of trying to solve the problems through

war. In this sense, an alternative positive way is through the process of socialization (family and school principally) to form a prosocial behaviour which is based of cooperation and altruism.

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THE JERUSALEM STATEMENT ON SCIENCE FOR PEACE*

Y. Becker, J. Vary, J.M. Ramirez
&
participants in the 2nd International Symposium "Science for Peace"
Jerusalem, 23 January, 1997

Occassion for the Preparation of the Statement

This Statement on Science for Peace has been elaborated by members of the international scientific community met in Jerusalem to participate in the Second International Symposium on Science for Peace. The Symposium (January 20-23 1997) was organized and hosted by the UNESCO-Hebrew University of Jerusalem International School for Molecular Biology and Microbiology with additional support from UNESCO (Paris, Venice Office, Global Network for Molecular and Cellular Biology), the International Institute of Theoretical and Applied Physics and the Hebrew University of Jerusalem.

The Statement on Science for Peace resulted from the presentations and discussions of how scientists can work for peace and the beneficial utilization of scientific results, with a special focus toward both the current situation in the Middle East and a broader set of geografical situations. It is presented within the background of the UNESCO charter and several important international documents addressing the social and ethical responsibilities of scientists.

In 1989 UNESCO accepted the Seville Statement on Violence (1986) which included the responsibility of scientists to prevent the misuse of scientific concepts to justify domination and violence. UNESCO sought to convince the public that "the same species who invented wars is capable of inventing peace", since peace begins in our minds, thus paving the way to the UNESCO Culture of Peace Programme.

In 1995, at the time of the 50th Anniversary of the United Nations, representatives of the world's major Academies of Science and international scientific community issued the Genoa Declaration on Science and Society. In the Genoa Declaration they assert their adherence to the principle of "respect for diversity of cultures within societies and promotion of science as a distinctive and important contributor to bridging such diverse

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cultures and promoting peaceful coexistence in accord with the principles of freedom, autonomy and rationality".

In 1996, UNESCO promoted a Forum in Como, to further reflect on these issues. The resulting Como Declaration on Science, Society and Ethics further addresses the role of science for providing an important paradigm for Culture of Peace in the areas of disarmament and reconversion.

The Jerusalem Statement on Science for Peace

We, members of the international scientific community from very different disciplines, gathered in Jerusalem, address this appeal to all individuals and institutions working in science and for science.

As the language of science is universal and cooperation in science builds important bridges of communication, we appeal for increased and unified efforts to adopt Science for Peace as an important goal in concert with the goal of fostering a Culture of Peace.

We recommend that all parties and especially scientists work to ensure that:

1. scientific endeavors and achievements be used only for peaceful purposes and for the greater benefit of humanity;

2. there is free movement of members of the academic community;

3. there is a free flow and sharing of scientific information and knowledge;

4. the academic environment remains open and dedicated to the free expression of ideas.

We recommend that efforts be undertaken to develop a "Science for Peace Oath" for young scientists to take when accepting their degrees. This oath could be similar to the Hippocratic Oath wich is taken by Medical graduates.

From Jerusalem, the City of Peace, we call upon everyone to work for the rapid implementation of these ideals to further enhance the peace process. We encourage commitment and action to remove obstacles to these ideals. We request that UNESCO, governments and other organizations facilitate the achievement of the recommendation of this document.

Recommended Actions for the Middle East

This Science for Peace Symposium (January 20-23 1997) has been a unique opportunity for creative suggestions and concrete proposals to be presented and discussed by representatives with different backgrounds and perspectives from the Middle East. In

light of these presentations and discussions, and in the order to achieve the recommendations of the Jerusalem Statement on Science for Peace, we recommend that UNESCO, governments and other public and private institutions become involved and supportive of:

1. specific actions to foster mobility and increased contacts among all members of the academic community in the region;

2. the establisment of a world class international institution of higher learning and research in the Middle east open to all students without regard for country of origin, religiousd faith, political thoughts or gender.

From the outset, this international university would be especially dedicated to finding transdisciplinary solutions to the human resources, development and social needs of the area.

The participants of this Science fro peace Symposium dedicate themselves to work witihn their own institutions and governments for these goals.

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PEACE IS SCIENTIFICALLY POSSIBLE: FROM THE SEVILLE STATEMENT ON VIOLENCE TO THE UNESCO CULTURE FOR PEACE PROGRAMME*

J. M**artin Ramirez**

It is an honour and privilege for me to be invited to participate in this Symposium of "Science for Peace", held in Jerusalem, the City of Peace. We have the more than laudable aim of letting everybody -people and institutions at all levels- know that scientists have a very important role in assisting the achievement of the peace process, particularly here in the Middle East. I would like especially to thank its main covener, Prof. Yechiel Becker for his efforts in making possible this UNESCO-HUJ School, and to the advisory board from UNESCO who have helped him in its organization. I am grateful as well as to Prof. Vladimir Kouzminov for his effort on the publication of the Proceedings.

As convener of the Seville Statement on Violence (1986) in which scientists from all the world and from many different disciplines stated that peace is possible, that the world can be without war, I am going to dedicate the core of my intervention to make a short historical comment on its genesis: which were the main reasons which urged us to elaborate the Statement, difficulties we found on the way and how we finally achieved that first 'scientific' step towards peace. This has been successfully followed by the creation of the UNESCO's Culture of Peace Programme (1994), and with the Jerusalem Statement on Science for Peace that we are writing during these present days. Since it has been already established that peace is scientifically possible, I will go further into the next step giving some suggestions about where and how to find the peace we scientists are looking for.

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For the psychobiologist who studies brain mechanisms supposed to be involved in aggressive behavior, conceptual as well as ethical problems arise from the fact that research dealing with brain-behaviour relationships is both a research endeavour like any other and one that clearly differs from

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many others. It differs in that the data obtained, the interpretation given and the generalized conception of brain-behaviour relationships that is derived from them, contribute to shape our vision of man, his 'nature', his being and his evolution. Conversely, this vision of ourselves, of our supposed 'nature', is bound to somehow orient -unconsciously, or more deliberately- the way in which we construct the conceptual framework within which we elaborate our working hypotheses and how we interpret the results obtained when verifying them. It matters all the more to be fully aware of these reciprocal relationships between personal convictions and actual scientific endeavour since our basic interest lies in a deeper understanding of the biological determinants of our own personality and behaviour, even though our experimental analysis is carried out -for obvious ethical reasons- on the brain of some animal species. The true weight and the real influence of our personal convictions clearly appear when, on the basis of one and the same array of available facts, but, admittedly, with selective emphasis put on some of them, some feel entitled to deliver, with regard to human aggression and violence, a 'message' of necessity and fate, while others are led to deliver one of freedom, responsibility, and hope (for more precise questions related to this topic as well as many relevant individual features fruitfully subjected to psychobiological investigation see: Karli, 1996).

Some people say that war and violence cannot be ended because they are part of our biology, in the same way that they used to justify slavery and racial or sexist domination by claiming that they were biological and inevitable. In the same way that they were wrong in these latter justifications, it is also scientifically incorrect that peace is not possible. Therefore, we thought that it was our responsibility as scientists to speak out on the basis of the latest information, although aware that conclusions in science are never final. The elaboration of a document stating the scientifical state of art on the field of human aggression and violence would give a needed message of hope to humankind, as opposed to the myth that it was something naturally inevitable. The obstacles found in our attempts, however, illustrate the extent to which ideological preconceptions often interfere with an actual scientific endeavour. I want to mention briefly some events objectively revealing.

In the late seventies, the International Society for Research on Aggression (ISRA) decided to launch a UN-Committee that, among other goals, would aim at organizing a series of symposia under the auspices of UNESCO. It was hoped that these symposia would eventually lead towards a UNESCO statement on human violence, following the example of what had previously been achieved by UNESCO with regard to the notion of 'human race'. A provisional programme was drafted and submitted to UNESCO. Both, our Swiss colleage Pierre de Sénarclens, at that

time head of the Division for Human Rights and Peace, and Mr. M Bow, director-general of UNESCO, responded in a most favourable and encouraging way. But then, highly polemical discussions took place within UNESCO concerning our proposal, to the extent that Pierre de Sénarclens resigned from his UNESCO position (he went back to Lausanne to resume his teaching of political sciences) and M Bow sent a second letter telling our President that the proposed topic was too 'touchy' to be dealt with under the auspices of UNESCO.

Some time later, Carlos Chagas, at that time President of the Pontifical Academy of Sciences, invited us to draft a motivated proposal for a Symposium devoted to "the biological and sociocultural determinants of human violence". We soon heard from him that the Pope had read the proposal, that he fully approved of both its structure and general spirit, and that he encouraged us to proceed. And then, after a long silence, we learned that the Pontifical Academy had come to the same conclusion that the UNESCO: it was not timely to deal with the determinants of violence.

However, instead of giving up, we -scientists from very different disciplines- kept discussing freely, openly about it. The main question we wanted to answer was whether modern natural and social sciences knew of any biological factors that were an insurmountable or serious obstacle to the goal of world peace… Efficiently coordinated by David Adams, professor at Wesleyan University, -at that time the mail connections were not easy at all among people geografically scattered throughout all the continents, when fax, e-mail or internet were not existent yet- we exchanged the latest information about animal behavior, psychology, brain research, genetics and other related sciences. Finally, a draft was elaborated and sent to all of us for its study. Then, around twenty of us met in Seville and La Rabida, just from where Columbus started his discovering trip to the New World, and after one week of practical seclusion, the final Statement on Violence was born. It was May of 1986, the International year of Peace. Afterwards it has been endorsed and published by many scientific organizations around the world, and the very UNESCO, by decision of its General Conference at its 25th session (Paris, 16/11/1989), ordered its dissemination.

In plain words, the Seville Statement on Violence says that peace is possible and that wars and violence can be ended, making clear that there is nothing in biology that stands in the way of making a world without war. War is not in our genes, as stated very expressively by Eibl-Eibesfeldt (1979), and we need not accept human aggression as a fate; as the Nobel Price winner Lorenz pointed out, "we shall not improve our chances of counteracting [intra-specific aggression] if we accept it as something metaphysical and inevitable, but on the other hand, we shall perhaps succeed in finding remedies if we investigate the chain of its natural

causation" (1963). Far from condemning humanity to war, thus, biology makes it possible to end violence and the suffering it causes and, consequently, to achieve peace (see: Adams, 1991; Ramirez, 1994a, 1996a).

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Obviously achieving peace is not an easy task at all, even if the wish for peace expresses a much-felt need in our days. This first step -peace is scientifically possible- is necessary, but not enough. A second important step has to come. Once we know it is possible -it must begin in the mind of each person with the belief that it is possible…-, the challenge now is to counteract the prevailing culture of violence which has pervaded so many societies and to transform it into a culture of peace. How to contribute towards this transformation? One way is to find permanently shift attitudes, values and behaviour in order to promote peace and social justice, and the non-violent resolution of conflict and security through a transdisciplinary approach. This primary scope, which is the aim of the UNESCO's Culture of Peace Programme, requires cooperation at all levels, everyone working together for peace and reconciliation.

Within this universal and transdisciplinary task for constructing peace, scientists also have a specific role to play. Given the interesting and precise suggestions on the topic made throughout the present Symposium, and more specifically in the Jerusalem Statement on Science for Peace here elaborated, it suffices to add only a couple of specific comments. First, we have to understand the problem and its possible solutions: to know what is aggression, violence and war, and what peace really means in its deepest meaning, as well as which are their interacting biological and cultural factors. And, second, we should emphasize the potential value of education, specially during the early critical periods of development, to provide a major contribution to the control of aggression, in the prevention of violence and in the achievement of peace, stressing the importance of a comprehensive and global education with a transdisciplinary approach. We should convince the society about the benefits of investing adequate resources in such extensive educative efforts, instead of limiting its resorts to threats or punishment to control aggression.

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While problems are relatively obvious -even if you are not in direct contact with aggression, you often can be indirectly affected-, effective resolutions are not. They depend on understanding problems. A most effective means of understanding them is its systematical study, utilizing scientific techniques. For example, in our case, with a greater knowledge of the many causes of aggression, we can

develop an appreciation of the possibilities for controlling it, as well as an understanding of some of the reasons why we have failed to effectively control it in the past, such as a lack of its appropriate definition and measurement (see: Ramirez, 1997). Here I will just say that biology and environment taken separately are never causes of anything in an organism's development. Therefore, the human brain should no longer be considered as a generator of possible -or even inevitably- occurring aggressive behaviour (with improper emphasis on some humoral factor or even single gene thought to be specifically implicated), but rather as the mediator of a dialogue which may take on an aggressive form for reasons that can only be truly clarified through joint multidisciplinary efforts.

An adequate control of aggression is certainly a reality in innumerable discrete settings, and it is not an unrealistic goal for a society. Since there is no one factor that overwhelmingly produces aggression, what we need is a comprehensive approach, integrating different perspectives on violence, with an appreciation for the various objectively supported contributions of biology, learning mechanisms, social experiences…, and what is more important, their dynamic integration. If we maintain our present course in our research for causes of aggression, we will surely fail. This assertion can be described in no better way than with an extrapolation of the image constructed by McCord: Why is the sapling outside your window the way it is? What has determined its odd shape, its slow rate of growth, the way it leans, its anemic look despite the luxuriant foliage of your neighbor's tree? Whatever your answer, it will be inadequate (for your understanding of the tree, and for devising well-placed efforts to assist its growth) if you take into account less than everything that influences development does. You may know all about floral morphology and chemical processes, about the amount and rate of nutrients it received since it germinated, all toxicants against which it struggled, and variants in its exposure to sunlight…, but you will not understand this tree if you know nothing about its ecological history, about the molecular processes with which it was endowed. Our purpose has to be to begin the process of integrating the various domains of science that are studying the development of aggression and peace, in an attempt to use science to guide society in its efforts to prevent and control harmful aggression. Even if basic scientists may have the luxury of separate the biology of aggression from its psychosocial and environmental context with questions arising within their isolated domains; if we want to reach the ultimate goal of application of scientific information in the real world we can never separate them. There is a constant and circular interaction. As Craig Ferris says, "Development is 100% environment and 100% heredity", in a dynamic interaction (Grisso 1996).

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This brings me to the next major feature. If we want to achieve peace, we first need to know what peace really means in its deepest meaning. According to Pope Paul VI, the new name of peace is 'development' because, if we understand as peace the armonic whole of all what people need, personally and socially, for their happiness, development is a very good way for achieving it. Development embraces dimensions so distinct and integrated as culture, economy, education, politics, promotion of the weakest, respect of human dignity and human life, as well as a profound respect for the environment in which we live… An optimal approach towards peace, therefore, would be to prevent the problems of violence and war, f.ex., with a political, cultural and economical intervention, alleviating the poverty and other social conditions that breed these problems (Ramirez, 1996b). A true peace thus has to be supported by a real development of the humanity subordinating all goods and technic resources to the human dignity, the only sure foundation on which to lay a better wellfare state, a happier society and a more pleasant life.

How can we achieve peace if we don't realize that we are all 'one'? Only by fostering an environment that breaks down barriers, whether they be moral, religious, economic, etc., and by seeking the 'substances' that are similar to and unite all instead of those that divide and separate. How can we pretend that the new generations become more tolerant, asks John Elliot, Regius Professor of History at Oxford, if ignorance brings naturally to mistrust and even to hate? Since we would like to live in a permanent state of peace and well being, we have to lay down solid foundations to make peace education available (Ramirez, 1994b). Education becomes a preventative measure that informs individuals and caregivers about the causes of aggression: starting with pre- and postnatal health care, it would progress through the raising and formal education of children, and continue into adult social settings.

Besides the formal education, one needs to learn how to deal with emotion, how to transform anger and fear into love and compassion, how to communicate positively with others… and become happy.

An important aspect of this global education is the schooling the emotions, given the influenciability and moldeability of the feelings, especially during the early years. The affective education movement of the 60's - psychological and motivational lessons were more deeply learned if they involved an immediate experience of what was being taught conceptually- has rather become the emotional-literacy movement of our days: instead of using affect to educate, it educates affect itself. Prevention programs are far more effective when emotional and social competences are taught: such as impulse control, managing anger and finding

creative solutions to social predicaments. Emotional skills have to be also stressed: self-awareness, identifying, expressing and managing feelings; impulse control and delaying gratification; and handing stress and anxiety… (Goleman,1995)

Chronic anger is an habit that also can change through education: f. ex., teaching basic elements of emotional intelligence, particularly mindfulness of anger as it begins to stir, ability to regulate it once it has begun [substituting reasonable thoughts for cynical, mistrusful ones], and empathy [for frustrating encounters, you learn the ability to see things from the other person's perspective]. As Redford Williams says (1989), "the antidote to hostility is to develop a more trusting heart. All it takes is the right motivation. When people see that their hostility can lead to an early grave, they are ready to try".

Conflict resolution is another interesting point that can be meliorated via education, learning the many choices for dealing with conflict besides passivity or aggression. Given the futility of violence, it has to be replaced with concrete skills. When tension erupts, you can seek out a mediator to help settle arguments that otherwise can escalate. You have to learn to think differently about disagreements, and to recognice an expanded range of feelings. And patience must become an habit which will make us able to deal with life more 'peacefully'.

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I am aware that it is easier to write about peace than to achieve it. What it is difficult is to apply it into our mind and hearts. Even if until now we have not had time for peace, the time has come to take on the commitment to heal ourselves, our society and the world by the power of the truth, especially through science. It is indeed a hard task…, but we should never forget that peace is possible and that, in order to influence our surroundings positively, we must learn to develop inner peace within our minds. *Shalom, Salaam!*

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A FIRST STEP TOWARD PEACE IS TO KNOW THAT BIOLOGY DOES NOT CONDEMN HUMANITY TO WAR*

J. Martin Ramirez

ABSTRACT

For achieve peace, we first have to know better what we really mean by it, which are the main obstacles -aggression and war, and how people may avoid or, at least, control them. In this paper two main topics are stressed: 1. Aggression and Violence are different concepts; and, 2. Violence and war are avoidable. Consequently we have to know better ourselves and our neighbours understanding better our psychobiology.

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Peace is a field of general interest. We all are interested on peace, because, as classics said, *Pax optima rerum*. But to love peace is not enough. We have to look for it and achieve it. And for this, we first have to know better what we really mean by it, which are the main obstacles, and the people who may make it possible. Consequently we have to deepen our knowledge of ourselves and our neighbours… and for knowing us better we have to look for a better understanding of our psychobiology. This will be the topic of the present paper.

One way of knowing more about Peace is increasing our knowledge on Aggression and its control. My own inquiries over several decades have been deeply concerned with contemporary aggression and conflict resolution. I have sought insights from ethological, comparative and cross-cultural perspectives[20]. I have learned much from collaborators in several biological and behavioural science disciplines as well as my own home base in medicine.

* *Journal on the Psychology of International Relations* (in press)

20 See, for example, Ramirez, JM & Richardson, DS (eds) *Cross-cultural approaches to Aggression and Reconciliation*. New York: Novascience (2001).

The first main idea we have to make clear is that Aggression and Violence are different concepts[21].

'Aggression' is a natural behaviour, biologically present in all the animal kingdom. It is adaptive, intentional and with a purpose, which is the survival of the individual or of the species. It consists of the use of force to face a perceived threat against us, or as a guaranty of our limited resources. Some times it is justifiable and beneficial, but always when limited by self-control.

'Violence', on the other hand, can be understood as aggression directed towards a wrong target, in a wrong place, at a wrong moment, for wrong reasons or at wrong intensity. This unadapted behaviour, only found in the human species, is a biological alteration, pathological and destructive, and consequently morally unacceptable.

Social life, in addition to providing advantages such as a higher possibility of survival and reproduction, presents as well conflicts due to frictions and obstacles occasioned, for example, by the existence of limited resources. Social conflicts also enhance several essential functions for psychosocial development, and contribute to the increase of social relations and of cohesion. It is convenient thus to have enough information about the possible factors that may contribute to conflict and about their contexts.

As a matter of fact, our nature is basically well fitted to guide most of our social interactions by association and not by confrontation[22], Cupertino is a general trait in evolution. According to Lynn Margulis, the new forms of life were originated by symbiogenesis: eucariots were formed though a fusion of at least two different types of prokaryotes -of bacteria, each one with its own charge of DNA. This suggests a 'correction' of the Darwinian tradition, stressing a bigger importance of the co-operation than of the competence in the process of evolution.

But, from a biological prospective, a world totally devoid of protective aggression would be irrational and unimaginable. We would be as unprotected as most of the plants are. This potential protective and organisational dimension of aggression therefore helps to generate the dynamical tension between dominance and subordination which is necessary to define the social structure needed to achieve a lasting peace, a peace where eventual disputes can be contended, without overflowing their tolerate banks. Otherwise it will be converted into destructive violence.

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21 see Gómez Jarabo, G (1999). *Violencia: antítesis de la Agresión*. Valencia: Promolibro; and Niehoff, D (1999) *The Biology of Violence*, New York: The Free Press

22 de Waal, FBM & Aureli, F. (1997). Conflict resolution and distress alleviation in monkeys and apes. In: *Integrative Neurobiology of Affiliation* New York: NYAS, 317-328

The adapted individual would remain within certain limits, because he would calculate the potential threat and the intensity of response needed. But if the perception of the threat is distorsioned or the correspondence between stimulus and response fails, the aggressive reaction would become excessive; it will no longer be protective and tolerable, but unadapted and violent, because its excessive social cost (social rejection, jail or even death) would greatly exceed any possible short term benefit. When the use of force exceeds the border of what is acceptable, therefore, aggression is transformed into violence, always unacceptable, even if religious or ideological adjectives might be add in an attempt to glorify it.

'Christian violence' proposed many centuries ago by Saint Augustine of Hippo, for example, could accord with divine providence when employed as a means of achieving justice [all rulers, even pagans, were divine ministers who could proclaim just wars]; Crusade propagandists were anthologising and reviving these ideas, including the need for a just cause and a right intention on the part of the fighters. This concept of a 'political Christ' passed out of fashion after 18th century. And, in the 1930's, Jacques Maritain wrote that 'sacred violence was impossible', because no modern state could be associated with Christ wishes for mankind[23].

A similar comment could be done perhaps related to the Islamic *jihad*, which means something like 'struggle', embracing everything, from an *inward jihad*, as a battle against evil, resisting temptation or striving to perfect on self, or giving good example to others, to *offensive jihad*, or holy war attacking enemies, when there is a sense that 'faith is under threat', or even for the extension of Islamic territory, in its traditional form[24]. This last notion had almost ceased to exist in the Muslim war after the 10th century, until it was revived to fire an international pan-Islamic movement in the 1970's.

A wrong glorification of the violence can also be found in some left wing political environments. For George Sorel violence is "the only creative force of the history", and he wishes that proletarian violence would finish off *bourgeois* degeneration: *la violence est une manifestation premiere de la vie qui n'a pas besoin d'etre approuvée par le droit et par l'idéal*. Anarchists, even if ideologically try to show themselves as radically anti-violent [all kind of power and domination is inhuman], they also practice it radically. And Sartre approved of atrocities in name of the '*legitimate violence*' [that directed at a good cause] and believes in the

23 see Riley-Smith, J (1996) "Reinterpreting the Crusades", *The Economist* (Dec 23rd-Jan 5th 1996), 35-39

24 So Ibn Taymiyya said that "jihad against the disbelievers is the most noble of actions. This sense is also shared by sects in many other religions, like some Buddhist monks, some Christian fundamentalists, or the infamous Hebrew Sicarii, those Syrian Jewish Hasidim from whom the term 'Assassins' come.

cure of violence by violence: *la violence, come la lance d'Achille, peut cicatrizer les blessures q'elle a faites.*

On the contrary, Gandhi's *Satygraha* [non-violent confrontation based on a mutual respect between the interests of two parties] would only be effective if both adversaries agree to avoid the use violence. And Martin Luther King also pointed out that "violence as a method to achieve racial justice is not practical, and it is also immoral: It is not practical because it supposes a decrease in the spiral, which leads to total destruction. The old law 'eye for an eye' eventually leaves everyone blind. And it is immoral because it tries to humiliate the adversary instead of gaining his comprehension, it annihilates instead of converting, it flourishes with hate and not with love, it results in a monologue instead of a dialogue. Violence eventually is its own destroyer"[25].

The second idea we want to stress is that biology does not condemn humanity to violence and war.

Violence must be understood not just by examining the individual behavior but also the nitty-gritty human context in which it takes place. Society, instead of merely clamping down on youths, needs to address the behaviors and attitudes that ferment violence[26]. Looking at the present world (kidnappings in Colombia, Peru and many other places, revenges in Ruanda, fights in the Balkans or in the Middle East, brutal massacres in the USA…) clearly shows that violence shapes and obsesses our society, and if we do not stop being violent we have no future, as Edward Bond says in his preface to *Lear*.

Luckily enough, violence is not incontenible; it can be hold, controlled and prevented. In principle, violent behavior is also open to change, because many of its causes are under our control. But to achieve this, both, the individual and the environment have to change. How? Through interventions based on biology (cognitive-behavioral and psychopharmacological therapies) and on the formation of social capacities (programs aimed at preserving security, and at promoting contacts with others, estimulating compassion, tolerance, empathy, selfcritics and the dialogue between civilizaciones.

About two decades ago, the topic was scientifically approached by scholars from many different disciplines. During the 5th World Conference on Aggression, held in Mexico, in 1982, a working group was constituted with the main aim of making clear that there is nothing in biology that stands in the way of making a world without violence and war. Four

25 see Ramírez, J.M. (1994) *Violence: Some Alternatives.* Madrid: Centreur

26 Casella, R (2001) *At Zero Tolerance. Punishment, Prevention, and School Violence* New York: Peter Lang

years later, in 1986, and after many drafts, a final statement was approved by more than 20 international specialists from the all the continents, assembled in an International Conference on the Brain and Aggression (CICA) at Seville under UNESCO auspices.

For those who are not familiar with the 1986 Seville Statement on Violence (SSV)[27], its five principal conclusions are following:

It is scientifically INCORRECT to say:

* that we have a tendency to make war from our animal ancestors;
* that war or any other violent behaviour is genetically programmed into our nature[28];
* that in the course of human evolution there has been a selection for aggressive behaviour more than for other kinds of behaviour[29];
* that humans have a 'violent brain'[30]; and
* that war is caused by instinct or any single motivation.

In conclusion biology does not condemn humanity to war. Humanity can be freed from the bondage of biological pessimism and be empowered with confidence to undertake the transformative tasks needed for peace. The same species who invented war is capable of inventing peace. The responsibility lies with each of us.

Since the SSV was drafted in the 1986 CICA, and endorsed by the UNESCO General Conference in 1989, there has been an extensive process of dissemination, including translations into many languages and publications in many forms, including scientific journals. A number of major scientific bodies have either formally endorsed or publicised the Statement[31]. The SSV has become a normative instrument used by professional,

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27 See, among others, Ramírez, JM, Hinde, RA & Groebel, J (eds) (1987), *Essays on Violence*, Publicaciones Universidad de Sevilla; Adams, D (ed), (1991). *The Seville Statement on Violence. Preparing the ground for the constructing of peace*, Paris: UNESCO; and De Waal, FBW (1992). Aggression as a well integrated part of primate social relationships: critical comments to the Seville Statement on Violence. En: Silverberg, J & Gray, JP (eds). *Aggression and Peacefullness in Humans and other Primates*. New York: Oxford University Press.

28 Scandinavians, for example, are among the most peaceful people on earth these days, whatever they may have got up during Viking time. Meggitt descriptions of the warfare of the Mae Enga and other non-literate tribal societies, leads to the conclusion that, "it would appear that only social motivation proves to be essential for warfare, and that is group contact [the necessary planning assemblies and marches]. Submissive behavior may also play a role in training to avoid acing out of fear. Aggressive motivations, offense and defense, do not appear to be essential to the process, even if they may be aroused during some causal incidents" [Meggitt, M (1977), *Blood is their argument: warfare among the Mae Rnga Tribesmen of the New Guinea Highlands, Mayfield*, Palo Alto; Adams, D (1990), Contributions to a Statement on Violence, In *Para conocer al hombre*, UNAM, p 49-51]

29 Humans have significant potential for violence, as well as for empathy and altruism [Miedzian, M (1991) *Boys will be Boys*. New York: Doubleday

30 There is nothing in our neurophysiology that compels us to react violently; how we act is shaped by how we have been conditioned and socialized.

31 Much of this activity was reported in the Seville Statement Newsletter which was published three times a year beginning in 1986 and disseminated widely around the world. The official version of the Seville Statement may be found in English on the Internet at several locations including the following:

http://www.unesco.org/human_rights/hrfv.htm

http://www.lrainc.com/swtaboo/taboos/seville1.html

members.aol.com/cloudgate50/seville_statement.htm

educational and peace organisations around the world to reply to those who believe that violence and war are in our biology and therefore inevitable.

Given that this belief is still very prevalent -shared by about half of all young people in the world- it is a question which arises quite often and which has important consequences. This is important, as we have shown that young people who believe war is biologically determined are seven times less likely to engage in activities for peace. Even when other factors such as beliefs of family and friends are controlled by partial correlation techniques, this relationship between belief and action is highly significant.

The issues raised by the SSV are still very much under investigation. Rather than closing off debate, the Statement preamble recognises that 'science is a human cultural product which cannot be definitive or all encompassing' which implies that our scientific knowledge at any one point in time is still tentative and needs to be continually tested against new hypotheses and information.

Debate is sometimes complicated by confusion among different levels of analysis. At the one extreme are biological factors which change slowly over time, usually over many generations, whilst at the other extreme are social and cultural factors which can change quite rapidly, even within a single generation. And within the latter, it is important to distinguish attitudes and actions at the level of large social groups, even states, from those of individual and small group interactions. When these different levels are confused, debates can be fruitless and frustrating.

One important question not addressed by the Statement concerns the origins of nationalism, ethnocentrism and xenophobia. While war may not be in our genes, some argue that genetics predisposes us to formation of enemy images. Others argue that they can only be the product of social conditioning. This debate has important consequences for social policy, and has been recently considered in some detail in the 50th Pugwash Conference[32].

Another unanswered question concerns the origins of the fact that men, rather than women, are usually the actors in warfare and other socially organised violence. How much is this biologically rather than socially determined? If it derives from socially learning then it may be important to change the way we educate and raise young men. The Seville Statement limits itself to saying that biological factors are not the immediate causes of war and other social violence,

32 50 Pugwash Conference on Science and World Affairs. Cambridge, August 2000.

and does not indicate what are these causes, which are presumed to be, social and cultural[33].

Insofar as work for peace is linked to the struggle for justice, it may be that our biological predisposition to anger is more essential for peace that for war[34]. In fact, the phenomenon of righteous indignation is basic to the methodology of active non-violence, as it has been developed by Gandhi, or Mandela, among others, and which has had an important impact of contemporary history providing an alternative to war and violence as a means of social change. Active non-violence requires the learning of conflict resolution so that anger, instead of being used destructively, is channelled into constructive change. This learning can be an important component of the contribution by educational systems, both formal and non-formal, to the transformation needed from a culture of war to a culture of peace.

This is a topic which UNESCO is committed to do through its Culture of Peace Programme, in a global approach which includes education, culture, communication and social sciences, following the Yamoussoukro Declaration (1989) which recommends helping "construct a new vision of peace by developing a peace culture based on the universal values of respect for life, liberty, justice, solidarity, tolerance, human rights and equality between men and women"[35].

33 See Adams, D (1990), Contributions to a Statement on Violence, In *Para conocer al hombre*, UNAM, p 49-51; Adams, D (1996), War is not in our biology. A decade of the Seville Statement. International Meeting on Biology and Sociology of Violence, Valencia , September 1966.

34 "Human aggressiveness does not cause wars; wars lead to human aggressiveness" [Robert A. Hinde (1997). Is war a consequence of human aggression?. In: Feshbach, S & Zagrodzka, J. (eds). *Aggression: Biological, Developmental , and Social Perspectives.* NY: Plenum Press, pp 177-184].

35 Final Declaration of the International Congress on Peace in the Minds of Men [Yamoussoukro, 1989].

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DEVELOPING IN PEACE: POVERTY, MIGRATION AND VIOLENCE*

J. Martin Ramirez

The topic of this WG5 is nothing if ambitious. It tries to answer to complex questions: population migration, consequences of poverty, causes of instability, loss of human resources. Last 10 December 1995, at Oslo, in the Nobel Lecture given on behalf of the Pugwash Movement, John P. Holdren stressed six troublesome features of the new landscape of insecurity that the post-Cold-War dawn has revealed… "The last in the order of presentation, although by no means last in importance, is the set of interaction linking security, economic development, and environment. A durable global peace -he said- cannot be attained in a world in which a substantial fraction of the population languishes in poverty. There can be no lasting security, even for the rich, in a world full of discontent poor. This durable prosperity, so essential to durable peace, depends as much on environmental conditions as on economic ones: current practices in agriculture, forestry, fisheries, energy supply, and manufacturing are clearly eroding the environmental underpinnings of prosperity. Persisting in this oversight is a prescription for a degree of misery, social and political instability, and conflict that no amount of effort will be able to contain… It is the most intractable of the six mentioned problems, because it is likely to be related not to the 'tools' of conflict, but to the 'roots' of conflict in the inadequacies of a majority of the world's people".

Developing in peace must be constructed within a complex web of inter- dependency. To seek solutions to these problems is a truly interdisciplinary focus, transcending the mere psychobiology, my own field of expertise [brain, hormones, neurotransmitters, drugs, nutrition… and their relationship to behaviour], to take into account many other important facets: psychology, anthropology, history, economics, politics, biology, sociology, and ethics. Professionals in the fields of education and communication have an important

* In: J. Rotblat (ed) *Security, Cooperation and Disarmament: the Unfinished Agenda for the 1990s,* Singapur: World Scientific 1998, pp 547-561

task to perform: to educate people to overcome poverty and its consequences, such as stress, conflict, crime and disease, whereas other professionals, like economists and politicians, are more involved in its etiology, going to the roots of misery and social instability and procuring the remedies for a real prosperity, full of security, wealth, health and, lastly, inner peace and happiness, which is the most important but largely left unattended.

This paper will try to point out some of the topics for a sort of brainstorming session. And, even if I shall try to limit myself within a classical socio-economical approach, I want to start with a *caveat*: when we assert that a sustainable development will not be possible without a peaceful world, we cannot forget that peace is something more substantial than merely the absence of war; that prosperity cannot be limited to economical growth as a remedy, as often it is the case, but it has to include something more important -call it what you like: inner peace, spirituality, happiness…-, and not necessarily connected with the economical development: some of the poor underdeveloped people are happier than the great consumers of the so-called developed world, as the rate of suicides ratifies.

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A large global problem across the world is the imbalance between an educated elite and an illiterate majority, a declining rich population and an expanding poor population who lacks capital, resources and skills. Poverty remains the single greatest cause of misery; and the surest **remedy for poverty is economic growth**. It is true that growth is usually associated with more environmental damage; for example, with pollution [the disposal of waste is also a growing global problem; environmental capacity to assimilate waste is running out, and perhaps tolerance by disadvantaged groups…], but even if development creates problems of its own, it pales in comparison with the harm caused by the economic backwardness.

The overwhelming economic and environmental predicaments of the poor cannot be solved by the poor alone without substantial cooperation from the rich, and, conversely, the predicament of the poor cannot be allowed to persist without peril to the rich. Either we will achieve an environmentally sustainable prosperity for all, or we will all suffer from the chaos, conflict, and destruction resulting from the failure to achieve this. A **mutual aid** has to be present. But, assuming it, we should ask what has this aid achieved?

a] Has the foreign aid relieved poverty? Many argue that aid has little impact and consequently it is a waste of money: aid money is surprisingly fungible; in almost all cases it is

spent entirely on consumption, but practically nowhere is there a big increase in investment, nor improvement in the lives of the poorest. In fact, only relative small amounts go to the poorest of countries [the 10 countries that are home to two-thirds of the world's poorest people receive only one-third of world aid], or to projects that benefit mainly the poorest of people [most probably it goes to support the consumption of the richest, those who least need help; some will even argue that aid is only a subsidy for corrupt governments]. A mere 2% goes on primary health care and 1% on population programmes; and even this aid tends to go to services that benefit disproportionately the better off, such as hospitals and universities. How much reaches the really poor, typically illiterates who have no access to basic health or education? Only 0.1% goes to primary schools and adult literacy, and 0.3% to basic health [These spending patterns often reflect the priorities of the recipient governments, but elites in developing countries are not always interested in promoting the general good]

b] Has it stimulated growth in the recipient countries? The main intention of foreign aid is not to relieve poverty as such, but to promote economic growth in poor countries. It helps many would-be entrepreneurs a leg-up out of poverty. Has it impacted on their economic growth? Some countries have enjoyed fast economic growth with relatively little aid, in particular in South Asia, while other countries which get a great deal of foreign aid do not grow at all, like Africa. According to Jeffrey Sachs, director of the Harvard Institute for International Development, aid works only when is part of an overall market-driven growth strategy; it should be much more selective going only to those countries taking strong measures to promote marked-based, export-led growth; the developing world, having embraced market economics, is bursting with juicy investment chances, getting a 'productivity transfusion' of capital and know-how[36]. And it has to be limited in time: a pre-announced sliding scale of aid: generous at the start, declining later.

c] Has it at least helped the donor countries? The aid is tied mainly to be spent in the own donor companies. It helps the giver [or lender] more than the receiver does. Donors may not care enough about the relief of poverty or how well the money is spent; they should reward success rather than compensate for failure. In a global world with a rich and powerful North and a poor and hungry South, the economic benefits to the industrial North from faster growth in the third world has been altogether ignored. Stronger competition will push rich producers to invest more into the poor countries, to expand markets for their exports, and to get cheaper imports, which means higher real incomes. In few

[36] L. Bryan & D. Farrell (1995), *Market unbound,* J. Wiley

words, with the foreign aid it seems that "poor people in rich countries are helping rich people in poor countries".

Although early economists thought about growth [Adam Smith's classic 1776 book was called *Inquiry into the nature and causes of the wealth of nations* and David Ricardo, in the early 19th century, formalised the concept of diminishing returns, crucial for understanding growth], economics neglected its study for many years. The resurgence of interest in growth theory is very new: it comes with Robert Lucas, 1995 Nobel price winner in Economics, who has started to concentrate on growth.

An implication of Lucas theory is that poorer countries should do better than the richest, growing faster: since they start with less capital, they should reap higher returns from each slice of new investment. On the contrary, the striking fact is that they do not: poorer countries tend to grow more slowly. Mancur Olson[37] tries to explain this apparent contradiction: the theory implicitly assumes that, given the resources and technology at their disposal, countries are doing as well as they can. Praxis, however, shows that the poor countries waste lots of resources, failing to make good use of them. Take labour, for instance. In poor countries, large emigrations of labour ought to raise the productivity of workers left behind, because each worker now has more capital, land and other resources to work with. But emigration does not have this effect. Capital and knowledge are being massively squandered in many poor countries[38]. This offers a rationale for the pattern of growth around the world: the economic opportunities for poor countries are phenomenal, as the Asia tigers have shown. The problem is not so much a lack of resources, but an inability to use existing resources well [this is the right way to judge the performance of communist countries before 1989]. This is what is happening in most of the poor countries.

The blindness to the adaptive power of a market economy brings to mind two fallacies:

1] The wrong conviction that growth in one part of the world must somehow come at expense of another. Growth has been a story of mutual advance, not redistribution. Very nearly the entire world is more prosperous now than it was many years ago.

2] Another error is the idea that there is only so much work to go around and consequently that the new technologies, rendering some jobs obsolete, lead to a permanent rise in unemployment. Since the beginning of the industrial

[37] M. Olson "Big bills left on the sidewalk: why some nations are rich, and other poor", *Journal of Economic Perspectives*, in press
[38] "Economic growth" *The Economist*, May 25, 1996

revolution people have predicted that machines would destroy jobs. In the past 200 years millions of manual workers have been replaced by machines, and, right now, by technology. The fear is growing strongly, even if over the same period, there has been a continuous growth and enrichment of jobs not in spite of technological change but because of it. The real fact is that other jobs take their place, with a widely shared improvement in living standards. Both, theory and evidence suggest that in the long run new technology creates jobs faster that it destroys them: it creates new demand, either by increasing productivity and hence real incomes, or by creating new goods. Indeed the countries that have been most successful in creating jobs -US and Japan- have also seen the fastest shift in their industrial structure towards a high-tech, knowledge-based economy. There are good reasons for believing that new technology will have little effect on the level of employment, but a big impact on the kind of jobs and the pattern of wages. It is not always the least educated who is most at risk from new technologies. Over the past decade or so it has displaced low-skilled workers, but in the long run it may be easier for computers to replace people in many jobs now thought 'skilled' than in more ordinary works. A crucial task of governments should be to protect the losers without denying the benefits to citizens at large. How? Far from merely paying a subsistence income to those whose jobs disappear, for boredom and idleness -which is socially corrosive, they have to help workers acquire the skills, literacy and numeracy they need to switch jobs, by means of programs of adult education, better job-placement services, grants and subsidies.

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The failure of the market economy has increased poverty, inequality, and social disruption. There is a **rising social inequality**. This income gap between rich and poor is widening not only in poor countries [many of the poor have become poorer; there is a net flow of wealth from poor to rich countries], but everywhere, encouraging unsustainable development. In USA, for example, 1% richest held 22% of the nation wealth in 1979, and 42% by 1992; in 1977, 5'9% of workers were poor; by 1993 it was up to 7.4%[39]. During the last years the percentage of poor workers and poor families with children has risen [there is an increase in single-parent households], and climbing into the middle class is getting harder.

Within developed countries, the ratio of the income of the richest 20% to the poorest 20% is between 8.5 and 11 in the four more unequal ones [U.S.A.,Australia, New Zealand, and Switzerland; in America, the chief executive of a big firm can earn at least 40 times as much as an ordinary

[39] according to Edward Wolff (*Top Heavy*)

production worker: more than $1m a year]. Japan, Germany and Sweden [these are among the most equal societies] have ratios of 4 to 5. Torsten Persson & Guido Tabelini (1994) argue that inequality may be harmful to economical growth: US and Switzerland had much slower productivity growth in the 80s than did more egalitarian countries.

Income inequalities arise from the independent actions of individuals with different skills and assets who are rewarded according to what consumers and producers are prepared to pay, for the market economy has no moral sensibility. A determinant of this inequality may be the difference in intelligence. Other determinants may be a combination of lightly regulated labour markets and global economic forces, and the fiscal policies to cut tax rates and welfare benefits.

And, besides hindering economical growth, this inequality leads also to important social consequences: more ill health, social stress and crime. If inequality foster crime and disease, then we should treat possible reductions in crime and diseases and increase in social cohesion as one class of benefits from reducing inequality.

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Another consequence of poverty thus is the **health inequality**. The health gap is also widening. According to the Institute for Public Policy Research (1994), in most developed countries the death rates of the lowest social classes are more than twice those of the highest, at most ages; and among men aged 45-54, they are four times higher than in richer areas. The least privileged can expect to die 8 years sooner than the most privileged. A child from the bottom income group is twice as likely to die before the age of 15 as a child from the top group [Infant mortality is twice as high for low-income groups].

David Barker[40], studying more than 20.000 adults with known birth weights, pointed to low birth weight as a crucial determinant of health in later life; consequently, one of the quickest ways of tackling with it would be to concentrate resources on women when they are pregnant. Among non-monetary factors that appear to be significant to health, this seems to correlate with status at all levels, from permanent secretaries down to the most junior clerk, as well as stress. What no one seems to know is the direction: whether good health helps to climb in life, or whether slipping down causes ill health.

[40] D. Barker (1995) *Mothers, Babies and Diseases in Later Life*, MRC

The causes of this health gap lie not so much in the health services [the British National Health Service (the mentioned search was done in the UK) offer equal and free access to health care to all, irrespective of income], but mainly in: inequalities of income, housing and unemployment; differences in lifestyles [upper income groups are more health-conscious; they smoke 50% less than 20 years ago, whereas among the poorest the has been almost no change]; diet [the better off are much more likely to eat fresh fruit and vegetables, compared with poor ones who have a much less varied diet and eat the wrong food]; and self-esteem; and obviously genetic inheritance.

AIDS is having a disastrous effect on populations, especially in Africa [e.g., in Zambia the average life expectancy has dropped from 66 to 33 years]. What this is going to do to the economy of these countries is yet to be researched, but the effects could be disastrous as the average wage earner is dying an untimely death, already the populations are beginning to consist of old people and orphans.

Aggressive anti-smoking campaigns and a better information about healthy diet or sexual intercourse could sharply cut mortality, indeed, but many people have enough stress coping with poverty, unemployment, migration problems and other ills. Telling them to give up their favorite puff or tipple would only add to it.

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Poverty and other related problems seem to show **ethnical inequalities**: even if they afflict people of any ethnics -whites and blacks both may proclaim their differences, but their interests are the same, -and need solving together, poverty hits specially the blacks. Let's take US data as an example: the fading of low-skilled jobs [black incomes are still only 60% of white ones, and the median net worth of black households is a mere tenth of white ones], unemployment [it is more than twice as high for blacks, over 11% against less than 5% for whites], poor schools [they are increasingly consigned to impoverished schools from which whites have fled]; the disappearing family [more than 60% of black families with children are headed by a single woman]; and higher crime [being a12% of US population, Afro-Americans make up more than half of all people convicted of murder; unfortunately, they are also the criminals' disproportionate victims]. Even if conditions for many blacks have changed for the better along this last part of the century -legal segregation has gone; a large black middle class has sprung up-, a black urban underclass has sprung up too, and with it more drug-addiction, crime and family breakdown.

More than three decades after the civil-rights revolution, America is steadily resegregating, with blacks and whites growing apart, nor together.

Whites have become resentful and tired and, feeling they have done more than enough, they are pressing to abandon racial-preference policies, which have become corrupted and come to seem intolerably unfair to who have never discriminated against anyone. The present discrimination prejudice is not racial [whites do not hate nor disdain blacks believing that are inferior and ought to be 'kept down' as slaves] but rational, grounded in reality: it is driven by fear from their security and property values. Blacks are likelier than whites to shoot taxi-drivers, not to repay home-loans or to mess up at work. A white woman shivers when she turns in the street at night and sees a young black man walking behind… and crosses the street. A former policy adviser in the Reagan administration, Dinesh D'Souza[41] argues that, since the end of segregation, blacks have advanced less than hoped. Its real cause lies with blacks. Blackwardness is due not to genes -he rejects biological racism, understood as the cultural superiority of biologically-defined groups resting on inherited differences- but to 'pathologies' of black culture: low ambition, irresponsibility and hopelessness, and with them failure at work, family desertion and crime.

Most blacks, still seeing themselves as victims, are anxious to preserve them. Already in 1968, after Martin Luther King's death, some of the civil-rights leaders stopped calling for integration into white society and dangled instead the lure of black pride. Blacks are beginning to suppose that government spending is not the main answer to their problems, that they have to take more responsibility, that they had better help themselves. They are told that they must sort out their own delinquents, police their own schools and credit systems, build their own enterprises, find their own discipline and self-esteem. The bad old tag 'separate but equal', now summons up images of all-black schools, with black teachers advocating 'Afrocentric' teaching and acting as inspiring role-models to their charges; black suburbs were black-owned banks, groceries and dry-cleaners keep money 'inside the community'… and possibly a black political party that will apply its own litmus tests to politicians, as we may see in the New S.A.

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Often **immigration** is merely a symptom of a wider problem, not the cause.

[41] D. D'Souza (1995) *The End of Racism*, Free Press

Usually it is a consequence of poverty and unequal distribution of resources. Today very few people migrate to a poorer country unless they are already rich and can afford to take their luxuries with them -f. ex., enough money to get 'home' if they fall sick. But this case is more like an 'extended' travel than proper migration -like retired people in the mild Mediterranean coasts. Nevertheless, the receiving country too can benefice from these people. Unfortunately, it is often the case that the 'rich sophisticated' migrant to a poorer country often exploits the resources both human and otherwise of their new host country which has neither the sophistication nor wealth to protect itself.

The standard migrants leave their country towards a richer 'paradise' because the conditions at home are unfavorable. For most of them, immigration has always been a painful experience, full of disappointments: you dream with a Promised Land where "streets are paved with gold", but then you come here and find it's not true. The clash between expectation and reality is very strong. Many migrants go back home. According to Pauline Marstrand's report[42], the structural adjustment policies of IMF and World Bank are devastating many economies, causing social and environmental breakdown and forcing whole communities to migrate.

The whole history of mankind is littered with examples of people who are forced to move for numerous reasons -like the second son in England who did not inherited land had to go elsewhere to find his fortune, like the people in Ireland who had to escape the great famine, like the people in Mozambique and Zambia who had to seek employment in South Africa, the Jewish people during the second world war, the masses of people in the former Yugoslavia who were in the 'wrong' zone, political exiles who don't conform, and so on. People thus do not up root themselves and leave their home and hart freely, but more often obliged by economical or political circumstances.

This uprooting is violence in itself, but it is often overlooked as if it is overshadowed by the dream of an expectation of something better. And history is inclined to write about the success stories. For example, Spaniards fleeing poverty -people from Extremadura who found fame as *conquistadores* of South America, the Irish whose descendent became the President of the United States, but nobody writes about the numerous migrants who either fail or even lose their lives.

A present wave of anti-immigrants, with touches of xenophobia and racism, has swept across all over the world.

[42] P. Marstrand, (1996) "Developing in Peace. Summary of previous Pugwash discussions 1990-95" Pugwash meeting No. 218

Let's mention some examples on the situation in some historically immigrant countries.

US is a nation of immigrants: 61 million people are believed to have emigrated legally since 1820; more than 20m are foreign-born population. Until the 1920s, the great majority of these came from northern Europe. In 1965, doors were open to a 'new immigration' from East Asia, most of them ambitious and highly educated, but restricted the ones from Latin America, many of them illegal and from backgrounds of poverty; and only 9% came from Europe. Even if Americans "sent out the message that anyone in the world in his or her right mind, should want to live in America… as the last best hope of mankind"… The fact is that today, when they do come, they are not always welcome.

Early in the century, Argentina was glad to take in European migrants to build a new nation. Then came poorer, usually browner, people from Southamerican neighbouring countries, often illegally though usually unmolested, to do temporary work. But now the economic and social climate has altered, and Argentines have become jealous of what jobs there are, thinking that they might become scarcer. Consequently, immigrants are their new bogeymen. Newspapers print anti-immigrant articles; TV shows migrant workers living in sordid squats; politicians link them to everything from cholera to crime… Polls show up a very high support for a curb on migration.

With a vast territory to fill up, Australia's watchword has been "Populate or perish". Britain is still the single largest source of migrants, though its share is down from 44.3% in 1963 to 12% in 1993. The post-war migration was made up much by Yugoslavs, Greeks and Italians. And, since the 'white Australia' policy was formally abandoned in 1972, migration from Asia has risen, especially from Vietnam, the Philippines and Hong Kong. In 1993, 43% of migrants had been born in Asia. No wonder the white descendents of the convicts are becoming nervous about the 'threat of the yellow peril'.

European countries are currently reassessing their immigration policies. Migrating to practically every Western European country has become a lot harder in the past few years. Roughly speaking, about a third of migrants to Western Europe in the past decade have been asylum-seekers, a third have been economic migrants, and the rest have been relations following along. In the 1970s Western Europe closed the door to economic migrants, except if they had close family already in the country, or they were fleeing persecution. The recent Schengen agreement stipulates passport-free travel among its signatory countries and, as a *quid pro quo* for removing internal barriers, the European Union has worked to strengthen its external border.

France has refused to implement the Schengen agreement. Its aim is 'zero immigration', not with standing that hugely increased proportion of French citizens are of foreign origin: one in four inhabitants either is an immigrant or has a parent or grandparent who was. This country's "image as the homeland of human rights has been damaged", says a report published by the UN. The face of the immigrant population has itself changed: whereas 25 years ago Europeans made up three-quarters of those who settled from abroad, now they are only 40%, and Maghrebians and black Africans account for nearly half.

Sweden wants a bill [not yet published] to make it harder for the huddled masses from the grimmer parts of the world to find a haven. Holland allows in virtually no new immigrants, except relations and asylum-seekers. Germany has steadily tightened its laws, trying to plug its eastern borders. Britain has also too restrictive political rules on migration -for example, after the last rule change in October1994 even the widowed mother of people settled in Britain have to wait until they are 65 to join their families- even if, unlike other European countries, it has not yet been flooded with immigrants [Britain has a lower proportion of foreign-born people than do Germany, France or Switzerland]. Its restrictions on migration, therefore, seem to be addressed less at the social problems than at the government's electoral problems: foreigner bashing is reckoned to be popular.

Some view the migration with distaste looking down on immigrants for its wrong reputation for filth and violence. In Italy, Erminio Boso, a Northern Leage's senator, wants the government to take 'footprints' of immigrants, and thinks expelled immigrants should leave on military aircraft because they smell and might rape the stewardesses on commercial airlines [Jacques Chirac also once complained about immigrants' smell].

Mass migration leads to tension between states or groups within states. Fear of 'economic migrants', fear of Islamic fundamentalism, and mutual distrust among the countries themselves, therefore, are reasons which explains why migrating has become a lot harder in the past few years, and suggest migration will become harder still.

In such hard times, what should be done about the migrants? It is understandable that no rich country can open its doors to all immigration accepting "all the wretched of the earth", as Jacques Chirac recently declared referred to France. Is a solution to bar immigration? Are there another less hard alternatives? Argentina, for example, plans to allow residence to anybody with a job contract. It would give chance the illegals to get their papers in order, and to the government to raise employment statistics and boost tax

revenues. Another alternative to immigration is to bribe migrants to stay at home, by giving aid to their countries: this explain the French determination to prop up Algery's shaky government, or how Spain has managed to stem the flow of north-bound Moroccans. These two governments however do not excitate to expel illegal immigrants, as the Africans recently sent back home in specially chartered aircrafts.

The same policy is not suitable for all countries at all times. The correct degree of control depends on what is going on inside a country [how the economic and social arguments for and against immigration balance out] and in the outside world [how much economic hardship or political oppression abroad is driving people to seek refuge elsewhere].

There is an 'instinct of territoriality' inherent in the indigenous which may partially explain the present wave of anti-immigrants. Instead of welcoming newcomers with open arms, nativists claim an invasion by hordes of poor, illiterate people who depress wages, 'steal' jobs, soak up the welfare system, and refuse to assimilate. This is a fallacy, a myth far from reality:

• It is fair to say that too many immigrants are ill equipped to prosper. Many are both poor and poorly schooled. But immigrants are not necessarily illiterate people: the typical migrants of the present day tend to be highly skilled workers [migrants usually are skilled workers who generate wealth, bringing in skills useful for an expanding economy] More immigrants than ever have college degrees. Many developing countries have good systems of education and produce many qualified people, but their internal institutions have not developed to use them, so they emigrate to industrial countries. Many join existing family firms or start their own businesses -restaurants and bars, rental centers, banks, retailers, import/export business, transport companies… As a result of this rising of entrepreneurs a new immigrant 'middle class' emerges, matching indigenous people living in the same neighbourhood. Human capital -education and skills- allows growing faster. For example, Asian-Americans is an ethnic group, which has above average education qualifications; this presence of well-educated workforce has been a factor in East Asia's success. The first generation of immigrants tries much harder; their success is higher than the one of the offspring of already settled generations. This partially explains why Black Americans and earlier immigrants in the States are the ones most likely to resent the competition of new immigrants, and why they seldom welcome newcomers; f. ex., a high proportion of Latinos agree that immigration should be restricted.

• Immigrants do not have a noticeable depressing effect on wages, unless they concentrate in poor places with fewer

jobs, and with higher costs. But usually they try to settle in fast-growing areas with lots of jobs.

• Immigrants do not 'steal' jobs. Almost all find work, but often jobs no other people want. This paranoia about jobs 'stolen' by the entry of immigrants into the labour force is a fallacy: if the skill distribution of the newcomers is lower than that of native workers, then wages of low-skilled labour will depress. But there is no reason why an increase in the labour force should permanently increase unemployment. Immigrants will spend their wages, thereby expanding demand, output and new jobs. If there are net job losses, it will not be because the newcomers, but because it is not sufficiently mobile between sectors and regions, or because relative wages have failed to adjust, as argued by the most recent OECD Jobs Study[43], which found that countries which had shifted the structure of their production most quickly to high technology sectors had created the most jobs.

• Saying that immigrants soak up welfare is a short sight. Research has shown that immigrants add little to the jobless total: initially they are more likely to suffer higher unemployment and depend more on welfare [much of the difference is accounted by political refugees, though] but, in the long term, they can contribute more to the economy than they take from it. Recent data in Britain show the success of immigrant groups: members of ethnic minorities are more likely to create jobs than whites [more self-employment: 15% against 12.8% in whites]; ethnic-minority families appear to value education very highly [they carry with studies after 16, almost twice as likely as whites], and are fast overtaking the skill levels of whites; and they forge trading links with their old countries[44].

• There are also concern about assimilation. Immigrants do not refuse to assimilate. Immigrants often present better examples of the old-fashioned 'American values' [strong sense of family, hard work, a drive for self-improvement…] than do native-born Americans: a) family: 60% immigrants are married [55% of natives] and 8% divorced [11% of natives], 40% with more than three children [25% natives]; and b) work: a typical immigrant is a little more likely to work, and less likely to finish high school, but if he succeeds he is twice as likely to have a doctorate. According to a Field poll in 1994, 64% of Californians thought that immigrants made just as good citizens as people born in America, and 13% even thought that the new arrivers made 'better' citizens.

They also act as 'cultural spreaders', introducing new ideas and habits in their new 'home' -just the presence of Chinese restaurants or *pizzerie* are examples of this filter

[43] "OECD Jobs Study: Evidence and Explanations" (1995)
[44] *The Economist*, Oct 21, 1995

of different cultures, although, unfortunately, 'rich' societies don't often accept this cultural enrichment gratefully. 70% of the above mentioned poll, thus, thinks it is a good thing for immigrants to preserve their customs. We must admit, however, that with the rise of 'multiculturalism' the assimilation has become harder to accomplish.

In few words, immigration helps, not hinders the economy; it has brought huge benefits to the host countries in the past and it may be seen as a key to revitalization. In Australia, once established, immigrants made a large contribution to the economy. Point to the great business achievements of generations of immigrants to Britain, most recently the Asian ejected from Uganda in the 70s. In general, foreign-born Americans do extremely well; naturalized citizens are less likely to live in poverty than native-born Americans are. Even more, US, the most powerful country in the world is composed virtually entirely by immigrants, with the exception of a handful of Indians pushed into reserves.

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Migration, like a coin, shows two sides. **Emigration** also deserves some specific comments. The first is the fact that in short term the result may often be negative for the families, which can be split: husband, lover or father leave; wives and children have to adapt to this loss which can be temporary or quite long term. Migration can also cause quite bizarre situations. F.ex, in Africa, where polygamy is accepted, the migrant often establishes a town wife or lover as well. This is very different from having several wives in a home kraal, however, as wife and children are protected by an extended family or clan; but in a town, a woman who becomes a 'town wife' of a migrant already married in a rural area, is left to her own devises when her husband returns home, and her offspring often suffer from all the hardships of a single parent family. This family disruption is one of the social fueling of poverty and crime.

The long-term results may be very beneficial. It is often an act of generosity -by leaving overcrowded households and poor countries, the person leaves more of the scarce resources for the ones left behind. Economists feel this ought to raise the productivity of workers left behind, because each worker now has more capital, land and other resources to develop, although unfortunately, most of the time, emigration does not have this effect.

Many migrants are still tied to their home village and, therefore, in constant flux: fresh young hopefuls head off to seek their fortune as others, away for a few years, return home with some money and expertise. Returning emigrants form a new entrepreneurial class, bringing capital and expertise

back home, funneling much-needed wealth to rural areas and poor countries: they often remit home money as well as bring back home the more 'sophisticated' culture and ideas learned in the 'developed' country. Where migration is due to poverty, therefore, emigration may be seen largely as a blessing.

On the other hand, migration due to political or religious reasons can become a 'braindrain' for the leaving country, because these emigrants are the better skilled and the ones with more future -f.ex., the numerous people, both blacks and whites, who left South Africa either for political reasons, or even out of fear of the future.

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This gulf between rich and poor fuels the resentment that makes people turn to crime, a leading problem today. Rising social inequality, increasing poverty, joblessness, weakened economic opportunities and neighborhood changes [residential mobility affects the organization of aggression within a neighborhood], poor schools and family disruption, reduce the effectiveness of both formal and informal systems of social control -parents, schools and neighborhoods are less successful at controlling the violent behavior of their children [punishments are less successful at deterring criminal offenders[45]], and become roots of **conflict and violence**. The poorest households have stressors unknown to the mostly middle-class neighbourhoods and consequently experience much more violence than those of rich families. Neighbourhoods characterized by concentrated poverty have rates of intimate assaultive violence about nine times higher than other ones. Other risk factors for developing problem aggression in childhood include: poor health and nutrition, harsh or inconsistent parenting, abuse and neglect, and experiences with violence in everyday life[46].

Social changes have all been accompanied by aggression and violence. Something about the modern world [increasing of complexity, technological progress, economic, ideological, and political changes…] has loosened what Eibl-Eibesfeldt has called the 'cultural corset' of traditional control of violence, thrown cultures into chaos: it seems to entail increasing social disruption, with higher intergroup tension and fighting, crime problems, changes in families…

Changing patterns of collective violence are also found to interact in a complex way with other social processes. A resurgence of ethnic, religious and cultural identification,

[45] Gary LaFree, *Race and violent crime in postwar America,* (1995) HF Guggenheim Report, p.24
[46] L. Pulkinnen & J.M. Ramirez (eds), *Aggression in Children,* Seville University Press; J. McCord (ed), *Childhood in the Inner City,* (1994) HF Guggenheim

pursuing demands for reparation or privilege, with the consequent dehumanization of the other, can lead toward tensions between social classes and misunderstandings between cultural groups and can stimulate -and justify- violence. Experience suggests that these conflicts are never simply 'age-old animosities' but rather a manifestation of contention for power in which political agents and the mass media play causal roles. Their disputes are usually generated from above or outside the communities involved, so solutions imposed locally do not usually succeed. Why people identify so strongly with their own group and disparage others? How does such an ephemeral identity as the modern nationalism -a recent idea, with invented traditions and fluid boundaries- come to mean so much that people are willing to kill and die for it? Will the control of internal aggressiveness lessen as outside contact proves to be less of a threat than imagined? Multicultural education will cure those 'misunderstandings'.

Crime is rather an **urban** characteristic[47]. Rural communities have less crime, among other reasons, because it is hard for strangers to sneak into an area unnoticed. It tends to be concentrated in small and usually deprived pockets of inner cities where poverty is perpetuated, where few adults work and most children are raised without fathers, and crime is the career of choice. Modernization put guns in the hands of marginalized groups who lack power and resources for development. This finding runs counter to the depiction in the family violence literature of the 'batterer as everyone'[48].

Future work should include studies of the impact of firearms and access to **drugs** on levels of violence, and of the response of social institutions. Drugs are a cause of street crime: patterns of drug use and distribution have affected urban violence [notably the introduction of PCP in the 70's and in the 80's of cheap cocaine, a drug that turn users into criminals; in the 90's there is a dramatic fall in use of crack cocaine and, interesting enough, in the number of serious crimes]. Ansley Hamid, doing fieldwork in New York, can describe varying marketplaces for various drugs, with different clients, different modes of distribution, and different patterns of violence[49].

There is also a heightened sensitivity to violence that it has long been hidden: there are **higher justice standards**. Modern thinkers have constructed more inclusive concepts of

[47] J. M. Ramírez, *Urban stress in the metropolis in transition* (1987), Paragon House
[48] R. Miles-Doan, *How different is the ecological context of violence in families from violence 'in the streeets'?* (1995) HF Guggenheim Report, p. 28.

[49] A. Hamid, *The Latin Kings and gang violence* (1996) HF Guggenheim Report, p.51

social justice that enable us better to see problems and solutions.

Although **murder** rate has risen in many developed countries[50] during the last half a century [the present rate of violent crime is 9.4 murders per 100.000 inhabitants in US[51], 4.5 in France, less than 2 in UK and Ireland (the lowest in the EU), and only 1.4 in South Korea or even lower in Japan], the present level is often far below past peaks: In Switzerland, a man was roughly twice as likely to be murdered one century ago. German murder rates were higher in the late 19th century. In America, there were high levels of violence in the 1890s, with a particularly high incidence of lynching and riots. Finland had a particularly violent past: the chance of being murdered in parts of the country at the turn of the 19th century was higher than in many American cities today [Serious crime in New York, for example, fell by 27% between 1993 and 1995].

Young criminals, however, seem more vicious than ever: whereas adults over 25 are carrying out fewer murders, the number of murders committed by mid-teenagers [14-to-17-years-old] is soaring [murders with guns rose five-fold between 1985 and 1993, in US]. It is an age-old complaint: Juvenal was grumbling along the same lines -young people are more violent than their predecessors- in Rome 2.000 years ago.

There are some societies, such as the Japanese, with much social peace and a very reduced serious crime. It is interesting to wonder who is responsible for this apparent low crime profile? The main explanation may be found in the particular nature of its society: homogeneous [there is almost no underclass, very low income inequalities, and practically universal literacy], disciplined [the fat rewards of accepting society's rules have made it foolish to rebel], drug-taking is minimal, imbued with a fear of ostracism that encourages conformity…

But the mentioned social reasons cannot fully explain why Japan is more peaceful today than in the past, even though some social conditions that tend to restrain crime have eroded. Immigrants, for example, may be scarce, but they are more numerous than they were. Traditional multi-generation households are giving way to nuclear families. Close-knit, village-like communities are being replaced by modern anonymity. A motorized age… All this weakens the old social ties that deterred crime. Why then Japan is more peaceful today than in the past? Somebody has suggested that the

[50] According to a survey on developed-country crime, carried out by the Ministry of Justice in the Netherlands in 1992, Spain tops in robing with and without violence, Australia and New Zealand tops in burglars, and USA tops in murder.

[51] South Africa shows a much higher annual murder rate, however: 50-55 murders for 100.000 people.

special strength and relaxed style of Japanese police have an important positive influence on the reduction of serious crime despite more awkward social circumstances. Their ruthlessness to presumed criminals is matched with a characteristic leniency and friendliness, showing a forgiving attitude to petty misbehaviour [this attitude achieves three objects: sparing the job of collecting evidence to prosecute minor cases, reinforce their view as decent, and reserve the judicial action for serious crimes]. The coziness of their *koban,* those ubicuous little local police boxes, and their helpfulness to the public, blending their real police work with some of the roles usually played by social workers, such as advicing them on family problems and civil affairs, seems to encourage the co-operation of the neighbourhood.

There are good reasons to believe a strategy based on **prevention** would be more effective at curbing the growth in crime, even if police strategy prefers to investigate crimes to preventing them, perhaps because the latter is viewed as unglamorous, and often with only long-term benefits.

Prevention may be of two types: making physically more difficult to offend and preventing behaviour which appears to lead to crime.

1. Making physically more difficult to offend, with:

a) the use of new diligent 'proactive policing' methods [simply patrolling help both to curb fear and deter opportunists] and the increasing of prison population [f.ex., the called "zero tolerance", encouraging police officers to make arrests for everything from suspects arrested for minor crimes are often perpetrators (or would-be perpetrators) of more serious offences]; the mere threat of prison acts as a deterrent, because loss of liberty is considered too high a price to pay for such a short benefit, and, obviously, criminals in prison cannot commit crimes against the general public[52]; and

b) the use of new technology for its prevention [close-circuit TV cameras, houses hidden behind high perimeter walls topped with razor spikes, street lighting, and prickly bushes to ward off burglars], which could be most effective against property offences.

2. Preventing behaviour which appears to lead to crime. The pessimists who say violence will always be with us must admit that virtue also has great staying power. Even if aggression is a pervasive human trait, its reduction is not beyond our grasp -the problem of violence can be solved-, as exposed elsewhere[53]. Crime and violence, therefore, can be prevented.

[52] The most recent figures show that US's overall crime rate fell by 2% in 1994, but the most serious crimes saw much bigger declines: violent crimes fell by 5%, murders tumbled by 12% (with the most dramatic drop in big cities), and robbery by 10%.

[53] J. Martin Ramirez (ed) (1994) *Violence: Some Alternatives* , Centreur

A way some communities have devised to fight crimes is to entertain and keep occupied bored street children -potential young offenders- encouraging them to join sports, arts, counseling groups, or outward-bound courses and training for work. We have to admit that boredom and unemployment may be a cause of crime.

The use of the potential of modern technologies such as computers and Internet may also offer some alternatives to fighting: disaffected individuals with access to a modem can now become part of a global network of activists that exchange ideas and experiences and form transnational ideological and social links which transcend national boundaries; or the use of non-political media of communication -films, music, humor…- which can bring protest movements closer together even when their goals are disparate. Is this related to the use of violence as a communicative and political tool?

Another way of prevention is its **control**, which can be achieve at several levels: a] nature's or biological; b] intentional self-control; c] informal social control, such as parents, school and neighbourhood; and d] formal institutional control, such as police and judiciaries which impose control on those who would use aggression destructively against others, or the state which reserves for itself the legitimate use of aggression, in punishment or in war.

Education, especially with an adequate socio-political approach on different levels, is very important for this topic. Recent research in America has found that 3-4 years old who are given high-quality nursery education are less likely to offend later in life than others from a similar background are. The message seems clear: get your children educated -remember that education is the best investment you can make-, raise them with good values, instill in the younger generation positive values in which they can believe, and especially make them appreciate the value of discipline.

On education for peace deals the third part of our very recent book on Aggression and the Nuclear War[54]. We have to convince the population by all educational means that violence not only is erradicable -even if human violence has a biological root, we are in position to control, modify and shape it through learning; our close relatives among the other animals also rely on threats and rituals which recall its potential but obviate its use; and they also show signs of reconciliation-, but also that it will solve nothing and reminding them that innocents are always the ones who suffer most.

[54] J.M. Ramirez & A.F. Rañada (1996) *De la Agresión a la Guerra Nuclear* Nobel

It is also possible to choose to live in peace, through a change in their occupation. A remarkable example of transition to peacefulness is found among the Waorani in the Amazon: some years ago among the most violent peoples known, they were able to change their society almost overnight through the mediation of several Christian missionaries and some local women who pressed the message that it was possible to choose to live in a different way. Raiding and spearing have not stopped altogether, but their experience support the idea that it is possible to choose peace.

In the long term, violence can be overcome by analyzing its **structural causes**, and their prospective solutions. If the nature of violence is complex, the analysis of its causes is even more complex. Violence is structurally rooted in many and complicated **socio-economical** factors, such as economical, social and political imbalance, unequal distribution of resources, poverty, squatter and unemployment, diseases and ignorance… There are also other **socio-political** factors facilitating violence. F.ex., the deeply rooted corruption and the abuse of instruments of oppression, whether it comes from the government institutions -the so-called 'institutional violence'-, or it is used by other 'oppressed' factions. Another main cause of violence is the lack of education, or even more precisely, the wrong **educational** policy, which favoured the removal of discipline and moral constraints from human behaviour.

Popular responses such as tougher prison sentencing, guidelines or school-based conflict training programs cannot be shown to make a difference to the problems they are designed to address. Real peace is not possible without justice, social equality, constant effort and hard work all necessary in solving the problems of society, fulfilling the basic needs of the population. Misery, violence and anarchy can be overcome, provided there is peace. But there can be no development without peace, or peace without development.

What can we say about the direct **consequences** of the real violence? Lack of security and fear of violence is threatening the order of a society, leading to the loss of human resources [highly skilled people move abroad in search of a more appropriate and sure environment], and stopping investment [as investors are scared off by violence, they prefer to invest in other places which offer a sound economic policy with a low risk profile]. Some people live a life of continuous fear about crime, which may be powerful even when the risks are negligible. There is often quite a gap between the popular presumption and the statistical probability. F.ex., walkers often avoid woods and parks, which are virtually crime-free, because they worry about being attacked. People tend to focus their fears on being attacked by strangers. Yet violence at the hands of family, friends and acquaintances is far likelier.

It is natural for societies to be worried and angry about any amount of crime in their midst, regardless of whether the rate is rising or falling over time. Any quantity of crime is too much crime, and to the person who has just been mugged or whose neighbour has just been burgled any statistical argument will smack merely of sophistry. Acts of singular brutality have provoked sudden public panics to which politicians have reacted by backing draconian new laws.

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Summarizing, even if this century made astonishing, enriching and life-prolonging strides in science and technology -we eat better, live longer, grow taller, travel farther and know more than ever before-, poverty is increasing, social inequality is widening, migration has become harder… These lead to important social consequences: disease, social disruption and crime, which can be overcome only by offering an adequate long-term educational policy and by previously solving the structural causes. Even if the above mentioned problems are prominent issues among the most important challenges to civil life, less agreement is found when the discussion turns to the solutions to these problems. If a strong economy is necessary for it, a prerequisite for peace is solidarity with the weaker members of our society. There have to be some correcting mechanisms to the market economy in order to achieve important principles of social justice which are necessary for social balance, for example giving employment to those people who are willing to work, and by allowing that all the population -especially the weakest ones- can live with human dignity.

Although we do not expect an immediate benefit to society from any of our research, a sustained interdisciplinary approach to these problems will yield understandings on which wise public policy and private decision-making can be based. Policy actions must rest on a firmer body of knowledge about the problems involved, and original ideas about interventions will only come from an informed, objective consideration of poverty and its consequences and how they affect human relationships, organizations and the development of peace.

I am aware that the suggestions that have been appearing here in favor of a better world free of poverty, imbalance, insecurity, violence and war are not easy to put into practice. To live with mutual respect does not happen spontaneously. A cooperative effort -a lot of work by all of us is needed to create the basis for durable prosperity and security. I hope that this Conference in which talented scholars discuss difficult questions and offer informed advice on improving the future, will help with a vision of a less violent world that might be created in the future.

Achieving world peace is an arduous process, which cannot be implanted overnight… But, if I am allowed to remind you a line from Ernest Hemingway's *The Old Man and the Sea*, "man is not made for defeat". The responsibility of developing peace lies with each of us. And, as we say in Spanish, *¡vale la pena!*. It is worth it.

21

PEACEKEEPING IN EUROPE: SOME QUESTIONS IN THE LIGHT OF THE BALKAN SITUATION*

J. Martin Ramírez

> On April 1st 1991, NATO achieved its main victory, in a war in which not even one shout was necessary. Without to wage a war, it succeeded in ending the main conflict for which it was created. NATO's real success was the cold war, which luckily didn't happen, against the Varsovia Pact; its twin strategy of watchful defense and co-operative *détente* paid off, obliging the Soviet regimes to surrender without even a shout. And, by the winds of fate, that formally happened precisely the very same day that, half a century before, April 1st 1939, communism lost its first big war, in Spain. Half a century has passed since its creation, until NATO intervene in its first real war, the course of which has not been as easy and clean as they had previously thought.

The main purpose of this Pugwash Meeting, as I understand it, is to act as a kind of brainstorming think-tank which may help in the planification of the most appropriated future for NATO and a European security policy. Not being an expert in any grand strategy, I think my collaboration should be limited to a much more modest task: rather than suggesting great ideas about the most convenient future of the 50 years old North Atlantic Alliance, I better constrain myself and put on the table some comments -questions more than answers- of lay people like myself about the most appropriate future of the peacekeeping policy in Europe in the light of the present NATO involvement in the Kosovo campaign and its peacekeeping task.

NATO IN THE KOSOVO CAMPAIGN

• According to a Spanish poll, applied to 2.500 subjects at the end of April by the Spanish C.I.S. (Center for

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Sociological Research), 38'6% of them were in favor and 44'4% against the NATO military intervention in Yugoslavia. If there was a mild **public support** for the war at the start, it began waning sharply afterwards.

• Many people feel than the **outcome** of the intervention of NATO in Kosovo, far from being a clear-cut victory, has been a bitter, unshiny victory, if not even a failure, strategically and morally speaking, getting a result, **apparently unforeseen**, opposite of the one wanted:

1) Instead of achieving its main humanitarian aim -to stop ethnic cleansing, the suffering it intended to avert has been intensified: the exit of the 1.600 OSCE observers and the posterior military intervention turned into a greater repression: the outcome was more mass executions and many more refugees.

2) The possible risks and consequences were miscalculated in both on the operative level and in the infravaloration of the enemy: they never intended to do more than drop a few bombs. They stumbled into a war they did not mean to fight: instead of putting Milosevic away, Serbs have became more united backing a strengthened Milosevic who still stays in place at home, even claiming victory. A similar thing happened a few years ago with Sadam Hussein in Irak after the Golf war. In spite of the high amount of sophisticate weapons used, the Serb army remains potent, having escaped serious injury (relatively few Serb soldiers have been killed: only 463 casualties in 78 days, according to Milosevic's rapports) with a formidable portion of its weaponry still intact.

3) The strategy of high electronic technology applied to war (precision laser-guided 'smart' weaponry, with deadly accuracy on pin-pointed targets) hasn't shown to be so decisive nor so precise as expected.

4) There is no war without risk; a clean war without casualties has shown to be just an unaffordable dream. It resorted to force with an inadequate preparation; because facts have shown that it was too precipitate in believing that air power alone could produce victory, excluding a priori the possibility of fighting its way in on the ground; perhaps NATO should have shown itself ready to drive the Serbs back by fighting on the ground as well, even if a ground intervention would have always being a very risky decision, given the geographical difficulties of Kosovo borders and its non 'politically correctness', in fact, NATO was not prepared to fight a war with soldiers who might get killed, because USA people would only swallow a casualty-free victory, but they would not tolerate an unnecessary loss of American lives (I'm sure that Gore feared his presidential chances could become collateral damage in a ground war); I'm afraid that this double standard where human lives are at

stake, pointed out by Zbigniew Brzezinski, Carter's national security adviser -an extreme sensitivity to American casualties, but indifference to the human cost of a war abroad- would have also happened in many other countries, mine included, with problems of democratic elections.

• **Misinformation** seems to be a policy present in all wars; this case was not an exception:

1) Manipulation of information, with a different treatment of the facts: whereas positive effects were 'amplified', errors, such as when a load of Albanians were killed, were 'reduced', or talked about as either collateral damage, if the victim was a refugee, or a tragic mistake, if the victim was the Chinese embassy.

2) Why have they threatened with an embargo, which everybody knew they were not inclined to make effective?

3) The propaganda war was been wan by Milosevic: TV focused on the 'innocent' victims of the attacks, at least until NATO entered Kosovo and uncovered very disgusting facts, like people hidden for months in cellars or, even worse, resting for ever in common graves.

• **Future consequences**:

The conduct of NATO during the Kosovo campaign has led to a lower prestige and credibility: as was said on the cover of 'The Economist' a few weeks ago, -'messy war, messy peace'-, if NATO has carried out 'a messy war', it is not surprising that its peacekeeping role is also put in doubt.

Among the main future problems, we would underline:

1) Refugee problem: 800.000 Albanians have been driven out of Kosovo, and another 600.000 are displaced within it. Their situation under the oppression was bad, but after the military intervention, I'm afraid it has become worse. How to deal with its solution?

If we really want to create the best conditions for their return, even if many of them will never return home, if only because they have no home to return to any more, wouldn't be a more reasonable solution to keep them in the region instead of sending them far, to other continents and in the middle of quite different cultures? Many younger Kosovars, after 'tasting' the flavor of the developed world, would prefer to remain abroad, looking for better opportunities.

How to prevent a reverse ethnic cleansing, protecting the 150.000 Kosovo's Serbs from Kosovo-Albanian revenge, understandable, but not acceptable at all? Any international

protection army has to be allowed to use force to guaranty security and effectiveness of the peacekeeping of the zone.

2) Costs of reconstruction and resettlement: the West must hurl itself into reconstruction for more heartily. How the reconstruction should be financed? This is a big problem, but far out of my field. Thus I just mention it.

3) How to deal with the desire for independence of the different minorities, or even majorities, as seems to be the case in Kosovo? Who choose between autonomy within Yugoslavia or independence?

According to the recent UNO resolution, Kosovars haven't got the right of self-determination they were fighting for; it seems to have been forgotten the Ramboullet suggestion that independence would be determined after several years of substantial autonomy within Serbia.

Who decides whether and where to put artificial borders? Do the Kosovars participate in those decisions or are they imposed by foreign institutions? Who speaks for the Kosovars in laying out the details about how Kosovo should be run? It seems that the world decides about them without considering the real interest and opinion of such 'a bunch of peasants', as they seem to be considered.

TOWARDS A NEW WORLD ORDER

• A new concept of '**humanitarian intervention**' of other nations against the transgression of a government against their own citizens, leads to the predominance of the fundamental universal human rights on the old principle of national sovereignty, in case of flagrant conflict between both. Its first logical consequence is that any abused minority is entitled to ask for help of the international community. This assertion, however, doesn't seem to match with the restrictive rationale applied by NATO in the Kosovo campaign: 'we act wherever we are able to do it without too much risk'. This discrimination -giving help to one, but not to another one- would be unfair. But, being realistic, trying to help all the many different 'kosovos' existing in the world, would lead into a real chaos…, unless the existence of a universal government or an international sovereignty, instead national ones, is accepted.

• The New World Order shows a shift from the bipolarity of the decades prior to the falling of the Soviet Union to **unipolarity**, with the presence of only one and uncontested world's superpower: the US.

During the initial bipolarity, NATO was conceived as guaranty of West in the front of the Soviet threat. Then, the falling of the Iron Courtain led to a rather chaotic decade of pseudomultipolarity, witnessing disgusting situations in very different areas: the Persian Golf, the Corn of Africa, the Great Lakes and Congo, the Balkans…

Now we are entering into a new period of unipolarity. USA is aware of being the hegemonic superpower. This fact explains why it not only leads the NATO, but also dictates, like a gendarme: even if the initial decision to go to war was international, its impulse has been thwarted by maneuvering on the US home front; most of the military power belongs to only one of the 19 members (2/3 of the airplanes used in Kosovo were American); with an American commander in chief; with declarations made by Clinton, instead of the delegate of the NATO Political Council, etc.

• **Is there any real alternative** to this New World Order under USA?

Does Europe have its own force with capacity for an autonomous action, independent form America, or on the contrary has it to rely on USA for diplomatic and military might also in our own backyard?

1) Europe wants more autonomy or independence from USA, but it has little 'real' capacity for acting by herself, it lacks enough power to solve by itself the problems on its own continent:

a) Europe is neither well suited to the decisive thinking needed to run a military campaign, because, unless the European Union becomes a sovereign supra-national state, it cannot take responsibility for defense away from its 15 national capitals; the appointment of the new figure of Mr. PESC would also be a step in this direction;

b) nor is it able to make the vast financial investment needed to duplicate the logistical support that USA currently provides to NATO.

2) Consequently, instead of trying in vane to supplant USA in NATO, via OSCE, WEU or EU, Europe has to accept realistically that America still has a big deal to say in the policing of our own continent; perhaps the **EU has to limit itself in supplementing USA**, such as trying to 'correct' the present imbalance of forces, thus strengthening and rebalancing their relationship.

How could it be done? A few weeks ago, the EU adopted a strategic plan to be developed during the coming 18 months, according to which its members would try to prepare their armies for carrying out peacekeeping and peace enforcement actions in low key crisis situations, keeping its cooperation with USA for bigger conflicts. For example, four years ago, USA

had to put one third of the 60.000 soldiers of the peacekeeping force in Bosnia; now, only 14% of the 50.000 soldiers in Kosovo are Americans.

- **Future of NATO** within the New World Order

Once NATO with real success achieved its main historical aim in ending the main conflict for which it was created, and its twin strategy of watchful defense against the Varsovia Pact and co-operative *détente* has paid off, is there any reason of NATO to continue? Wouldn't be enough to apply to UN for the solution of international conflicts?

In case of an affirmative answer -experience says that UN is not an effective body-, what should NATO's new real task be? Does it have a real serious strategy to stabilize strategic regions? Should it also be present in conflicts out-of-area, intervening in any geographical area, following the main conclusion of its 50 Anniversary Summit at Washington D.C.? What should be the balance of power between US and its other members?

I hope that some of the previous questions and comments may help as a modest contribution -at least, through answers, suggestions and views of others, following the traditional Pugwash approach- towards the finding of an adequate solution of any conflict which might threat the peaceful and humane resolution of the main problems of the world. Ending war doesn't finish with the victory, but with the subsequent durable peace, and in order of pursuing this necessary collective goal, we have to challenge the transition from the culture of war, which unfortunately still dominates the world, into the culture of reason and peace, as UN is stressing with the declaration of 2000 as year of culture of peace.

IV. PSYCHOBIOLOGY OF HUMAN AGGRESSION

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ANIMAL MODELS IN THE RESEARCH OF HUMAN AGGRESSION*

J. Martin Ramirez

At present, one of the major fields of interest in psychobiological research is the study of human aggression. Besides its contribution to our basic scientific knowledge and its potential value in the development of different applied sciences, the research on human aggression hopefully will also aid in the control of violence and social conflicts, and thereby improve the living condition of man, an ideal which we all should embrace. In addition, further knowledge in this area will permit a more adequate treatment of some mental diseases.

The purpose of the present review is to offer a schematic approach designed to illustrate how animal models have a heuristic, hypothesis-generating function, providing important parallels with human aggression and suggesting new directions for future research (Blanchard & Blanchard, 1989).

LIMITATIONS IN THE STUDY OF HUMAN AGGRESSION

Human aggression is not an easy field to study. The foremost difficulty perhaps is the **heterogeneous** nature of the **term.** 'Aggression' includes a semantic jungle of ideas, which span an ample range of phenomena and activities. Although all are labeled "aggressive", few of them have anything in common. In fact, most of them signify different things (v. Ramírez, 1981, 1994, 1996 a, in press) and, in turn, reflect the different ideas of many scientists regarding this matter.

A second problem consists of how to group or separate adequately the different **behavioral categories** -there are classification schemes based on context, topography, mechanisms, functions…- and, given their motivational

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heterogeneity, their measurements (v. Attili & Hinde, 1986; Ramírez, 1981, 1985, in press). Each tentative classification also reflects a particular methodological strategy. Some authors (e.g. Mori & Le Moli, 1993) even use aggression tests as valid tools for elucidating problems in taxonomy.

Furthermore, the convenience of seeking certain **common criteria of evaluation** -at least for each species- facilitates a better methodological capacity for comparing studies performed in different laboratories. The many criteria which are found in the literature can basically be grouped in two: a) discrete systems, in which a series of parameters are separately measured and analyzed [e.g. boxing, wresting, pushing, mounting… in rats (Ramirez, 1980)]; and b) compound systems, in which a general index of aggression is the product of the combination of different behavioral measures [f.ex., Simon (1983), using mice, proposed an index derived from multiple measurements and factorial analysis; or Ramírez & Delius (1979 a & b, 1986) developed another one, specific for pigeons].

Another important difficulty is the many **limitations and obstacles** encountered in the direct investigation of human aggression, such as**:** a) the lack of correlation between operational definitions; b) the artificial nature of the experimental settings used in the laboratories; c) the scarce attempts of longitudinal studies of aggressive feelings and acts in real life; and d) the complex nature of social violence and the behavior which has to be explained. Furthermore, scientists are not normally present when really violent acts occur. In addition, the studies of criminal or violent people are not usually done during their aggressive peaks, but when presumably their violent feelings are rather calm (Bach y Rita, 1995). Studying prisoners, f.ex., Kreuz y Rose (1972) found very little relation between the past criminal behavior, the present behavior in jail, and the psychological tests applied.

Moreover, most of the **experimental** approaches used to study the biological nature of aggression require certain **manipulations**, which are **not possible in human beings**.

OLD AND NEW PARADIGMS IN ANIMAL MODELS

We **need** to use **animal models** to generate hypothesis about aggressivity in humans. The biology and behavior of animals can help us in the knowledge of humans, given the important number of parallels that can be discerned.

The most important thing that we can learn from animal experiments are certain general laws and principles (Scott, 1994). Animal species are valuable in that they suggest hypotheses that may be true of humans and that may have been overlooked by students of our own species.

But we must never forget the peculiarities of our species, as there are many substantial aspects in which people differ from animals. Humans are a unique species, particularly in their ability to use verbal communication to regulate social behavior, including aggression. We shout, grimace, gesture, and fight as do a number of other mammals. However, we also insult, humiliate, torture, push buttons that release missiles, snub, ignore, engage in hostile fantasies, feud, seek revenge, and participate in many other aggressive actions which have no obvious animal counterparts (Feshbach & Feshbach 90). Humans can express their aggressivity much more subtly thanks to: a) their linguistic ability which contains a number of terms abstracting, conceptualizing and reifying factors relating to aggression (Blanchard & Blanchard, 1989); and b) the destructive power of available arms, which are a product of his technological development (Ramirez, 1995a, 1996b). We are more and more convinced that only human data will permit us really know the human condition, as our biological composition does not allow direct extrapolations from other species (Ramírez, in press).

Aggression has to be studied from different perspectives according to the species under investigation, because each species is unique regarding the form and function of its aggressive behavior and its differentiation between the sexes. What may happen in one species, will not necessarily happen in another. The unique cognitive, cultural and linguistic development of the human being suggests that any attempt of an exclusive biological explanation of the behavior will be insufficient.

But, paradoxically, the above mentioned limitations of human research force us to use animal models. Aggression is easier to study in animals, given their limited capacity of communication and the ritual stereotyped behavior which usually accompany animal behavior. Being less variable and modifiable, it allows a greater degree of control and a wider range of experimental possibilities than in humans.

Animal models should be selected bearing in mind not only their adequateness for generating valid extrapolations to human behavior -f.ex., biologically relevant situations, but also their feasible

morphological, electrophysiological, neurochemical and behavioral analysis. The choice of the adequate methodology to measure aggressiveness depends on the peculiarities of the species being studied.

In sum, although no animal species is an ideal model for human behavior, there is sufficient correspondence between specifics of animal models and human aggression. Extrapolation from animals to humans thus is a dangerous but necessary task (Benton, 1981 b).

Some of the **traditional paradigms** used in the laboratory to induce animal aggression include: a) **isolation** in which a single individual is isolated in a cage and then exposed to an intruder [particularly in mice (Andrade de Frias et al, 1987, 1988; Zucchi et al, 1994)]; b) painful stimula produced by **electric shocks** [mainly in rats and mice (Brain, 1981)]; c) introduction of '**intruders**' into the home territory [in most species (Onyekwere et al, 1993 a & b)]; d) **maternal aggression**, introducing 'intruders' to lactating females in the presence of the offspring [mainly in rodents (Palanza et al., 1994; Rosenblatt et al., 1994)]; e) **predation**, which is normally reinforced by food deprivation [mainly in rats (Blanchard et al. 1990) and cats (Zagrodska et al, 1989)]; f) techniques of **operant conditioning**, aimed at extenuation [frequent in pigeons (Ramirez & Delius, 1979 a, b & c)]; and g) **intragroup aggression**, analyzing the social cohesion of a colony [mainly in rodents (Pellis & Pellis, 1993) and primates (Rosvold et al, 1954; Gordon & Gust, 1993; Aureli et al.,1995).

These experimental paradigms differ in a) the variables needed for the occurrence of a specific kind of aggression; b) the type of aggression elicited; c) the species under investigation; and d) the context where the behavior is observed. All of them can be accompanied by **brain manipulation:** either lesions (Ramirez & Delius, 1979 a, b & c) or electrical stimulation (Ramírez 1991b, 1993; Ramirez et al, 1982, 1983) or chemical one (Onyekwere et al., 1993 a & b; Siegel et al. 1995) [mainly in rats, cats and primates].

These traditional paradigms, nevertheless, are not exempt from **problems**: they do not appear to be the most appropriate for identifying the natural biological functions nor do they clarify exactly the conditions which they are modeling.

The first difficulty is that the measurement of some simple variables does not seem to be adequate in the study of complex processes, such as the social interaction found in living systems, where it is highly

improbable that a single neural network would be the mediator of the various behavioral patterns (Scott, 1983). Another kind of approaches is therefore needed to measure all the interesting patterns simultaneously in different organisms and in very different situations.

A second problem is the use of conditions, which are not the ones, found in their natural settings. Their analysis may negatively influence the validity and generalization of the results because they may be systematically different to those which would be obtained in 'natural' conditions. To give a few examples, isolation of rats appears to be ethologicaly inadequate because their social organization in the wild consists of groups with many males; the colonies of cats in captivity go against their natural tendency to be rather solitary animals; attacks elicited by electric shocks do not reflect a natural condition and lead to confusion between fearfulness and reactivity to pain; infanticide can also be caused by possible maternal stress…

An additional problem may be individual variations and changing characteristics of the target. How can we be sure that the actual target to whom the attack is directed is not responsible of some differences in the responses? Do not influence on the behavior of the experimental subject the individual circumstances of its opponent -status, strength or eventual challenging attitude, as well as their eventual mutual previous familiarity?

A possible solution to this problem is to use **inanimate objects** as targets, in spite of their slight similarity to living cospecifics. Who opts for this technique must demonstrate at least the similarity to the interaction between living individuals in the elicited behavioral patterns and in their physiological bases. We have shown, f.ex., the inefficiency of the projection of images of pigeons -a technique often used in some laboratories to elicit the so called "irritable aggression": the response of birds is totally different from the one towards living intruders (Ramírez, 1982; Ramírez & Delius, 1978 & 1986). And cats, after stimulation of certain brain sites, react against other conspecifics, but not against cat's silhouettes (Ramírez, 1993; Ramírez et al., 1982 & 1983).

Another solution is the use of non-aggressive **standard opponents** -that is, live animals which react relatively uniformly thanks to a variety of techniques (Brain & Poole, 1974; Martinez et al., 1994), such as: a) castration (Barfield, 1984); b) restriction of movements

by using elastic bands -applied in our *live pigeon test* (Ramírez, 1982; Ramírez & Delius, 1979 a, b, c, & 1986); c) anosmia in mice, by bulbectomy or by infusion of zinc sulfur in their nostrils -used in our join research at Swansee (Andrade de Frias, Brain, Ramírez & Benton, 1987; Andrade de Frias, Brain, Benton, Ramírez & Walmsley, 1988): the anosmic animals spent more time in social investigation, and showed a much longer latency in attack; and d) analgesic sedation, f.ex. by injection of methotrimeprazine in hamsters which reduces the variability of behavior, lowers the stress when attacked, inhibits a counterattack and mainly eliminates fleeing away (Potegal et al., 1980).

To recapitulate, results obtained in these kinds of experimental settings may not correspond with the ones observed in more natural habitats; and quite a few discrepancies in the research results may be due to the diversity of methods used rather than to the basic actions of the variables examined.

If we want to understand aggressive behavior better, a suggested **methodological alternative** would be to study the mechanisms of its more significant and better defined sequences. Thus, in order to increase our comprehension of the basic phenomena and the mechanisms of aggression, **a more naturalistic approach and a more precise behavioral analysis** is suggested (Simmel, Hahn y Walters, 1983; Blanchard & Blanchard, 1988). Aggression represents only one aspect of social behavior. It cannot be understood in isolation from other behaviors, which affect and are affected by aggression; and, consequently, it should be measured in a variety of natural, biologically relevant situations. Although the atmosphere of any laboratory may differ from the natural habitat of any species, every attempt to approximate the social organization and the physical conditions of free animals would permit a better understanding of their behavior (Benton, 1981 a). Aggression thus should be examined in contexts as close as possible to the ones in which it naturally occurs.

But although it is very desirable that the experimental design reflects the natural conditions as closely as possible, the more environmental factors studied, the greater the possibility of non controllable variables and the greater the degree of complexity. The uncertainty of the results thus may increase.

A previous knowledge of the animal behavior in its natural environment and of genetics of the population in order to know about eventual selective pressures, would in great part help in the selection of the appropriate

laboratory setting, providing natural, complete and dynamic animal models (Blanchard & Blanchard, 1989).

Moreover, most of the time the more adequate situations occur within the context of a social system. Consequently, it appears reasonable to mention the context in which a specific behavior is observed: the interaction and the development of the roles of the different animals within a group, as well as their situation, housing circumstances, ecosystem, amount of manipulation, eventual stress during transport or any other kind of previous experiences. All of these can influence the subsequent social organization. We have observed different responses after electrical brain stimulation of the same site in the same animal, depending of its social status in the colony (dominant or subordinate). Miczek (1974) observed similar findings, after injections of amphetamine or chlordiazepoxide. It is also important to know the previous history of the subject, given that an interaction between genetic and experimental factors result in stable individual differences (Ramírez, 1995 b & in press).

If we want to study in depth the agonistic interaction in a natural environment, an **ethological approach** is highly recommended (Eibl-Eibesfeldt, 1979). Among other advantages, it offers vast information about an ample repertoire of patterns in an interactive and sequential nature and the possibility of audio-visual recordings. This allows a more exact study of the numerous movements, postures and signs characteristic of each species, as well as the complex sequences simultaneously performed by several subjects which might participate in an agonistic confrontation. Among the disadvantages, an ethological approach requires a considerable investment of time, space and effort. We have applied such techniques in the study of a variety of species: humans, cats, pigeons and hamsters (Mendoza & Ramírez, 1985, & 1987; Mendoza, Ramírez & Muñoz, 1985; Onyekwere & Ramirez, 1993 & 1994; Ramírez & Mendoza, 1984 & 1986; Ramírez, et al, 1987 & 1988).

To recapitulate, modern methodology tends to involve ethological techniques, which permit a more exact and complete measurement of a great number of behavioral components in biologically relevant situations, that is, a behavioral analysis as natural and dynamic as possible.

What **patterns** are most prevalent in aggression studies? We shall comment on four research strategies (see f.ex. Benton, 1981 a; Simmel et al., 1983):

A frequent approach is the use of **a single behavioral pattern;** f.ex., the latency to attack, the duration of the encounters, the time dedicated in fighting, or the percentage of attacks. Although this certainly helps in the knowledge of the mechanisms of some processes, it is limited in that it only focuses on a single aspect within a complex behavioral sequence. Most probably the physiological measures under study do not influence all the aspects of the sequence in the same manner. The results of this type of experimental design therefore do not permit an extrapolation to natural conditions in which many different environmental factors interact (Robberecht, 1989).

A second approach consists of analyzing a series of activities and evaluating them within a **composite score,** such as the one used in our *hand test and stick test applied* to pigeons (Ramírez & Delius, 1979 a & b, 1986; Ramírez et al., 1988). However, if these tests are used by experimenters without enough experience, there is the risk of mixing characteristics which really reflect different biological substrates.

Another approach is the use of **automatic techniques** (f.ex., electronic devises) which facilitate the recording of latency, frequency or duration of some behavioral units such as pecking in pigeons (Ramírez, 1982; Ramírez & Delius, 1978 & 1986) and vocalizations in cats (Ramírez, 1993; Ramírez et al, 1982 & 1983). This permits recording over long periods of time without disturbing the animals and avoiding eventual subjective influences inherent to any direct observation. Nevertheless, as the interactions expressed are complex, the data recorded can be imprecise.

A forth approach consists of elaborating **ethograms,** using a repertoire of behavioral patterns which are classified in definite categories, such as the 40-50 social postures described by Grant & Mackintosh (1963) in rodents, by Mendoza (1982) in primates, and by Mendoza & Ramírez in children (1985). Among the problems are the disputes over naming, definition and meaning of the different patterns, their lack of precise grouping, excessive branchings… as well as some practical problems in their recording and analysis.

Given the rich complexity of the behavioral components of aggression, it is difficult to choose those aspects which should be included or excluded from its measurement. According to Huntingford (1981), 71% of the publications on aggression are limited to a single pattern, assuming that it adequately describes the

entire aggressive response, which is thus understood as a unitary phenomenon. Nevertheless, this presumption that apparently similar activities necessarily have identical mechanisms is not always true; f.ex., a cat can bite a neck when fighting with conspecifics, killing mice, carrying their kitten or during copulation…, but these phenomena do not seem to share common biological substrates.

When different aspects of aggression are studied using physiological manipulation techniques, there appears to be different influences between the different types of response. More important for our knowledge on the biological control of aggression is the measurement of a series of behavioral components without which our understanding of how such phenomena are organized would be more difficult. In consequence, the more behavioral aspects we record -which is facilitated by the use of tools such as videocameras, electronic counters or computers-, the better.

AN INTERDISCIPLINARY APPROACH

The study of topics such as aggression demands many different levels of inquiry, as is clearly evident in the diverse nature of its research efforts. This requires a long list of disciplines, each one with its own theoretical priorities and methodological peculiarities. Although each discipline can advance significant contributions, an excessive compartmentalization in the study of aggression, in addition to possible semantic confusions, creates the risk of repeating identical experiments even though the manner of study might be different, and there is often a complete absence of references to "alternative" studies.

The "separatism" between different disciplines is the main "stumbling block" to our progress in the knowledge of the psychobiological mechanisms of a clearly interdisciplinary phenomenon, such as aggression. That is the reason why we stress the necessity of a cohesive and integrative approach (Ramirez, in press) c). Our understanding of aggressive behavior and its biological regulation would be better if we start describing and analyzing the data at lower level in different species and situations, using a rich variety of drugs, hormones and anatomo-physiological manipulations and applying techniques and methods proceeding from different disciplines. The findings will be of wider interest and more complexity than usual. Then, comparison of

different models will lead into theories and more interesting implications, as they are dependent on criticisms proceeding from researchers of other specialties. We, therefore, prefer interdisciplinary strategies which permit the integration of the various disciplines interested on the topic, instead of doing research in parallel using the narrow specialization of each discipline.

Examples of this modern approach can be found among psycho-pharmacologists, who already are beginning to appreciate the complexity of the behavioral patterns and their dependence on the environment; in ethologists, who are starting to apply drugs in order to analyze the behavioral interactions and to identify the neural mechanisms of aggression; and in psychologists, who have learnt to include pharmacological strategies and ethological analysis in the etho-pharmacology of aggression (Miczek et al. 1984; Rodgers, 1981). This has given rise to a plausible effort of scientists interested on aggression to convert themselves into competent "non-specialists", although they are of course aware of the need of real "specialists" proceeding from the most diverse areas of knowledge.

Moreover, as no one can resolve in a complete and definitive way all the aspects of aggression, we need to turn also to other colleagues who study this behavior from other perspectives, such as historians, sociologists, philosophers, anthropologists, biologists, physicians, psychologists… because aggression, far from having only psychobiological roots, has also cultural and historical causes. Only the 'collective' knowledge of everybody will give us an adequate perspective for the future investigation on aggression, facilitating the culmination of important objectives.

As previously discussed in our book *Aggression: Functions and causes* (Ramirez & Brain, 1985), some of the aims and problems which workers in this area should ask include the following: a) a better consensus about the nature of 'aggression' and 'dominance', and into which situations these terms are more appropriately employed; b) how far do levels of behavioral analysis 'color' our appreciation of 'aggressive' acts; c) is it rational to separate aggression research from other behavioral studies when this attribute only accounts for a part of the organism's activities?; d) how far can one extrapolate between species; e) into what degree different forms of aggression have different biological bases?; f) what control of aggression is realistically offered by its research and under what circumstances are such therapies ethical?; g) are functional explanations of human aggression of any scientific utility?; h) can

one learn something of the 'basic' nature of humans by studies of young children.; i) to what degree should responsible scientists be concerned about extrapolations in this area of investigation by popularizers of science and politicians and about the uses to which their research is put? (Brain, 1985; see also Ramirez, in press)

We conclude with a mention of a general scientific focus, which should be stressed in the study of aggression. Mechanistic and reduccionistic materialism, characteristic thoughts of the last century, are progressively abandoned at the fore of almost every field of scientific investigation. They have become inadequate as a way of describing the complex dynamical systems that seem to interpenetrate everything. Instead, today science is developing pictures of organisms that have profoundly interconnected and self-reflexive global structures, and tends towards more organismic and holistic theories, based rather on the concept of systems (Davis, 1995; Pribram & Ramírez, 1980, 1981, 1995; Ramírez, 1984). This scientific revolution particularly affects the research on a behavior like aggression which always needs to be expressed within the context of organismic and social systems as opposed to either stimulus or response correlates of aggression: the pressure on an social system can alter the relation between the organisms of a system, disturbing the relationship between its members and consequently increasing aggression (Scott, 1983 & 1989). Therefore, given the nature of such diverse "aggressive" activities and the extensive list of disciplines interested in its causes and functions, a better knowledge of the aggressive behavior and its control requires, together with an interdisciplinar research, conceptual studies, integrative revisions accurate behavioral descriptions and cohesive analysis (e.g., its evaluation).

Finally it is convenient to remember that research of aggression is no exception to a general rule that should always be in the mind of the scientist: if a conclusion does not seem to be sufficiently justified at the present, it is better to hold judgement. Fundamental areas of study are further from explanation and more incredibly mysterious than ever. We psychobiologists, as many other scientists, feel the enforced humility as we confront the ever-expanding circumference of our own ignorance. Science is by no means omniscient.

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23

HORMONES AND AGGRESSION IN CHILDHOOD AND ADOLESCENCE

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ABSTRACT

This review do a survey on recent psychobiosocial studies on association between hormones and aggression/violence in children and adolescents, with a special focus on puberty, given the rapid changes in both hormones and behavior occurring during that developmental period. Since it can't be assumed that all readers have much background knowledge, it inevitably begins with some comments about the concept and multifaceted nature of aggression, as well as with a brief reminding about hormone candidates to be linked to aggression during human development. Then we finish off with the status of its knowledge in today science, tackling in a systematic way with the main data published, hormone by hormone. The origin of the gender-based differences in aggression must lie in neuroendocrinological events occurring during prenatal life or early in postnatal life. A complex and indirect effect of testosterone on aggression is proposed. A low HPA axis activity seems associated with chronic aggressive and antisocial behaviors. It is also suggested that early adrenal androgens contribute to the onset and maintenance of persistent violent and antisocial behavior, and that it begins early in life and persists into adulthood, at least in young boys. There are also some studies suggesting an association between aggression and some pituitary hormones in children, even if present data are still far from being consistent. The hormone-aggression link during development thus is not consistently reported. There can be an indirect relation in three ways: hormones can be involved in the development of aggression as a cause, as a consequence, or even as a mediator. Psychosocial factors may influence the causation and progression of violence in children through hormonal action.

I. INTRODUCTION

One of the biggest hurdles in the study of aggression and violence is the lack of a consensus on their definitions (Kavoussi, Armstead & Coccaro, 1997). Although understood in common usage both terms are recognized, there is much disagreement about their precise meaning and causes. They are used so broadly that it becomes virtually impossible to formulate a single and comprehensive definition. Under the general rubric of aggression or violence an *omnibus* term with a certain amount of ambiguity is subsumed, which consists of a large variety of meanings, related to several qualitatively distinct subtypes of behavior heterogeneus in nature. Even if they may be similar in appearance, each one is related to different factors, has separate genetic and neural control mechanisms and is instigated by different external circumstances (see Andreu & Ramirez, in press; and Ramirez, 1996, 1998, among others). Some authors tend to conceive aggression as a behavior based on biology, and violence as a social construction. Erich Fromm, shows them as two antithetic biological concepts. Aggression is seen as a biological behavior, natural to all the animal world, adaptive, intentional and propositive, not always necessarily negative, but sometimes justifiable and beneficious, needed for the survival of the individual and the species, and always under the limits of the self-control. Violence, on the other hand, is considered a biological alteration, privative of humans, malign, pathological and destructive, and consequently absolutely undesirable and reprobable, that should always be controlled and replaced by an alternative behavior (Gómez Jarabo, 1999). Another distinction is presented by Archer (1994, 2000), who understands by aggression the occurrence and frequency of acts, with no reference to their consequences; and by violence, solely the damaging consequences of aggressive acts. Many others try to include both within a *continuum*, rating violence as an extreme, harmful aggression, defined broadly like 'the abusive or unjust exercise of power' (Rivara, 2002) or as 'hypertrophic aggression' (Sanmartin, 2002). The conceptual differences between aggression and violence thus are still to be clarified (Ramirez, 2000a, b). Considering this conceptual confusion in this paper terms such as violence, aggression or aggressivity will be used synonymously, for pragmatic and operational reasons.

This article will stress the importance of biology in the study of violence during developmental ages, but it does not mean that we conceptualize biology as a domain isolated from other ones. We are not slaves to our genes, nor slaves to our environment, as somebody said. Neglecting psychosocial factors in the causes of aggressive behavior would be as misleading as to focus on the individual's biology without

recognizing its inevitable interaction with other factors, such as cognition, emotion, or social context. A close knit community with stable families and effective policing, for example, may reduce the levels of violence in antisocial prone adolescents. And, on the contrary, neglected and abused children are more prone towards antisocial behavior. A developmental perspective of aggression thus is based on the assumption that aggressive behavior is multideterminated and dynamic over the life span, product of a complex continuous interaction of the multiple psycho-bio-social changes. This holistic approach promotes a much needed focus on the plasticity of the child (Pribram & Ramirez, 1980, 1981, 1995; Stoff & Cairns, 1996). The social environment thus is linked to human behavior through our biology.

The most important general insight of recent years has been perhaps the recognition that life experience can shape brain chemistry in significant ways, and that experience and neurophysiology form a seamless web. The neurobiological plasticity expressed in the functional organization of the nervous system is open to the input coming from the personal experiences, which can result in large, long-Iasting and consequential change. Stressors, for example, appear to affect hormone concentrations in humans, even if these effects have received only minimal research attention. The integration of biological research with social-scientific studies thus can add to our understanding of how life experience influence interactions that involve or lead up to violence (for a longer discussion of this topic, see in this same Journal: Book, Starzyk, & Quinsey, 2001).

One of the many biological component systems that affect aggression, and with a very promising future given its extraordinary recent advances, is its relation to chemistry – neurotransmitters, neuromodulators, and hormones. Pharmacological and genetic studies have dramatically expanded the list of neurotransmitters, hormones, cytokines, enzymes, growth factors, and signaling molecules that influence aggression (Nelson & Chiavegatto, 2001). This neurochemical/neuropeptide/neuroendocrine 'orchestra', as it has been elegantly posed by Eichelman and Hartwig (1996), is played through many anatomical sites within an organism genetically prepared to function aggressively.

Although most of the experimental psychoendocrinological research is done in other animal species, given the many technical and ethical limitations and obstacles encountered in the direct investigation of aggressive behavior in our species (Ramirez, 2000b; Ramirez & Brain, 1985), human aggression is unique. We may have 'inherited the biological basis' for aggression in common with other species, but we have a unique capability for intelligence and learning, and this applies to all kinds of behavior, including the aggressive one. Humans may show overt aggression in the same

situations as other animals, such as in competition over food, mates or dominance, but usually our own intelligence plus the social rules established by our culture allow a higher flexibility, preventing us from being violent in those circumstances. The motives for violence in humans are clearly more complex, having to do with self-image, reputation, and perceptions of 'psychological' harm (Toch, 1984).

This review is a systematic search of hormonal correlates to aggressive behavior in human infancy and adolescence. The main reason for this delimitation is because developmental processes may provide the common ground for understanding the processes of socio-biological integration, and reproductive transitions provide excellent periods of development in which to examine hormone-behavior relations. Age is an as important as neglected individual-differences variable in aggression research. Only a handful of psychological studies had examined age differences (O'Connor, Archer, & Wu, 2001) until the recent 14th ISRA World Conference on Aggression (Montreal, 2002), which has been focused precisely to this very topic: the developmental origins of aggressive behavior.

2. METHOD

Data Sources: SCIENCEDIRECT and MEDLINE-derived Online reviews of bibliographies were systematically searched for articles published during the last fifteen years related to hormones and aggression in children and adolescents. Some pivotal earlier publications were also obtained and included in the review. Reference lists from selected and review articles were also examined.

Study and Data Selection: The abstracted data of each study will be presented, hormone by hormone, with a short discussion on their main findings and suggestions. *A summary combining their results in relation to age, sex, and the type of aggression is also given.*

3. HORMONES ASSOCIATED TO HUMAN DEVELOPMENT

There are some dozen hormones of particular importance in the control of human development: thyroxin (T_3) from thyroids; cortisol (CORT), and adrenal androgens (dehydroepiandrostenedione [DHEA], dehydroepiandrostenedione sulphate (DHEAS], and androstenedione [•4-A]) from adrenal cortex; testosterone (T) from testis; estrogens (E) from ovaries; insulin from pancreas; and a series from pituitary: growth hormone (GH), thyroid-stimulating hormone (TSH), adrenocorticotrophin (ACTH), gonadotrophins (luteinizing

hormone [LH] and follicle stimulating hormone [FSH]), prolactine, and vasopresine (ADH).

> During puberty, dramatic changes occur in endocrine physiology, and specially in the hypothalamic-pituitary gonadal (HPG) axis: the gonads secrete hormones in amount sufficient to cause accelerate growth of the genital organs and the conspicuous appearance of secondary sexual characters. The most obvious changes are brought about by the rise of the secretor activity of gonadal and adrenal sexual hormones in interaction. Its time is usually assessed from the appearance of outward signs attributable to the action of hormones. But, there is a first event, immediately previous to the morphological changes: an increased secretion of the hypothalamic LHRH, followed by a gradually increase of the pituitary gonadotrophic hormones: FSH and LH. The peripheral increase of T and E with their characteristic events follows. Girls tend to pass through various stages of puberty at an earlier age than boys do (18 to 24 months earlier), beginning at approximately ages 9 for girls and 10 for boys. In males, in all except the 10-year-olds, there is a sharp rise in T across a 1-year period; in the 14-year-olds levels begin a *plateau*. In female, T shows little change in the 9-year-olds across 1 year; there is a rise in T in the 10- and 11-year-olds; and the changes in T becomes more variable in the 12-, 13-, and 14-year-olds because of menstrual cycle variations (Tanner, 1978).

For both boys and girls there are, however, wide individual differences in T in the same chronological age cohort during early adolescence. Many years ago, Schoenfeld (1943) observed that 4% of 10-years-old boys already showed pubescent signs, but 6% of 14-years-old boys showed none yet. And a similar study in girls (van't Land & de Hass, 1957) showed that, whereas 12% of 12-years-old girls had started to menstruate, another 12% of 15-years-old ones had still to experience menarche, with a range of 11 to 16'3 years of age [average: 13'5]. These individual differences in hormonal levels at the same chronological age pose important theoretical and methodological considerations. Genetic factors and timing of puberty as well as other environmental (climate, light, temperature…), socio-economical (nutrition, urban vs. rural, stress…) and experiencial factors (experiences of success and failure are differently reflected in competencies and adjustment) contribute to these individual differences in hormone levels at puberty. The methodological approach, used to control for individual differences in timing, is to include age as a covariate in analyses when relations among hormones and behavior are examined (Nottelmann, Susman, & Dorn, 1987; Susman et al., 1985, 1987; Susman, Dorn, & Chrousos, 1991).

4. HORMONES ASSOCIATED TO AGGRESSION DURING HUMAN DEVELOPMENT

Only a few of these above mentioned hormones have been found to have some relationship with aggression during human development: gonadal and adrenal androgens, and perhaps and in minor degree also gonadotrophins, prolactine and estrogens. Let us here attempt to review what has been reported in the scientific literature.

4.1. **GONADAL HORMONES**

38. Brief information about hormones during human development.

The main androgen or male sex hormone is T. Its secretion rises in three periods of life: an early 1st peak in the fetus from about 11 post-menstrual weeks probably till birth, time when it falls rapidly (during this time it causes differentiation of the external genitalia and of the hypothalamus in an male type); a 2nd peak about two months after birth lasting a few months (its function is still unknown); and a 3rd very large peak at puberty (growth, maturation of genital organs and appearance of secondary sex characters), first becoming apparent between 10-12 years of age, requiring a joint action with GH for its full effect on the adolescent growth spur. In humans, androgens have been described, albeit inconsistently, to play a role in the regulation of sexuality, aggression, cognition, emotion, and personality.

The female sex hormone is E. It begins to be secreted by the ovaries very early in life, long before puberty, at low levels during childhood, increasing sharply at puberty, and fluctuating regularly thereafter with the phase of the menstrual cycle. Contrary to what has been observed in the testes (a prenatal peak of T), there is no evidence of any hormonal action by the ovary of the fetus. They also have an important role on maturation of genital organs and appearance of secondary sex characters.

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5. Report of the studies.

Given the dramatic changes that occur in endocrine physiology at puberty, it is not surprising that increases in **testosterone** are hypothesized to be related to increases in aggression. This explains why T has been the most investigated hormone in its research. The wealth of evidence supporting the ability of T to facilitate aggressive behavior in a broad number of mammal species has led to wonder about its potential role in human aggression, expecting at least a positive correlation between both variables. These studies,

however, yielded equivocal results. Even if elevated circulating T levels have been reported in some antisocial youth, the T-aggression link is not consistently reported across studies in children and adolescents. Archer (1991) conducted three meta-analyses, including only five to six studies, and found a weak, positive relationship between T and aggression. Another recent meta-analysis based on 45 independent studies with 54 independent effect sizes re-examined this relationship (Book et al., 2001), and found a range of correlations from –0.28 to 0.71. This mean weighted correlation (r=0.14) corroborates Archer's finding of a weak positive relationship.

The first study to show the activational influences of circulating T and aggression in adolescents was done with 15- to 17-year-old boys. Aggression in response to hypothetical provocation was measured by self-reports. A direct and longitudinal effect of T on aggression was shown: a higher T level led to an increased readiness to respond to provocation, but T had no direct effect on unprovoked aggression (Olweus, Mattson, Schalling, & Löw, 1980, 1988).

A second study designed to analyze puberty-related psycho-biological processes in 10- to 14- years-old girls examined, among other aspects, whether hormonal pubescent changes were more likely to be associated with negative affect, measuring self-reports of emotional states and a hormonal assessment in serum of LH, FSH, E, T, DHEAS and CORT. Aggressive affect was negatively associated with DHEAS, but no relations with T were found (Brooks-Gunn & Warren, 1989; Warren & Brooks-Gunn, 1989).

A third study was a NIMH-NICHD collaboration that analyzed, among other aspects, the relations between serum levels of adrenal and gonadal hormones (LH, FSH, T, E, DHEA, DHEAS, •4-A and CORT) and mother-reported aggressive attributes in 56 boys and 52 girls, age 9 to 14 years. The general pattern of findings in boys only, but not in girls, was a higher level of delinquent behavior related to lower DHEAS and T/E_2 ratio, and a higher rebellious attitude related to higher levels of LH, lower levels of FSH, and higher levels of DHEA (Susman et al., 1987). Another aspect focused on was the expression of anger of young adolescents while interacting with their parents during problem-solving tasks. The expression of anger was related to a consistent relationships with •4-A, which will be commented later, and to higher levels of hormones that increase at puberty, especially with regard to E in girls. The interpretation would be that young adolescent girls may be very sensitive to changes in E level, as is also hypothesized during the menopausal period (Inoff-Germain et al., 1988). From the same sample, adjustment problems were also associated with a hormone profile similar to that

descrbed for aggressive attributes: higher •4-A and lower T levels or a lower T/E ratio (Nottelmann et al., 1987).

T levels could be a signal of social success rather than of physical aggression, as suggested first by Robert Saposki (1991), examining experiential influences on T and CORT secretion in male baboons in natural environment, concluded that aggressiveness and social status were associated with higher T, while subordinates were with lower levels, and more recently in human adolescents by Schaal et al. (1996) in a study that analyzed the association of male pubescent T with social dominance and physical aggression. Boys perceived as socially dominant by unfamiliar peers, from age 6 to 12, were found to have concurrently higher levels of T at age 13 than boys perceived as less socially dominant. In contrast, boys who had a history of high physical aggression, during the same age range, had lower T levels at age 13 compared with boys with no such a history. T levels therefore were positively associated with social success rather than with physical aggression. High T levels in adolescent boys may thus be regarded as a marker of social success in a given context, rather than of social maladjustment as suggested in previous studies. Adolescents may try to gain social status through dominance and leadership, using aggressive and assertive methods. If successful, T is expected to increase, and if unsuccessful, T would decrease because the negative status associated with failure.

Another question posed was whether chronically aggressive and impulsive behavior affects hormone concentrations in adolescents during their developmental transitions. Hormone determinations in serum and saliva and several self-report tests were applied to Caucasian rural adolescents, either experiencing transition to puberty (boys: mean age = 12’7; and girls: mean age = 11’9) and experiencing transition to pregnancy (girls: mean age = 17’4). An analysis of hormone-behavior connections showed concurrent relationships, indicating individual differences in hormone concentration as possible influences on behaviors. Experience and behavior may also be implicated on hormone concentrations, changing the endocrine milieu. Subtle variations in timing of puberty related to experience may predispose some adolescents to aggression and violent behavior, and to other wrong coping strategies, such as heavy drinking. Also late maturing males experience difficulty in attaining dominance and peer popularity because their immature physical status (Susman et al., 1996b).

A cross-cultural comparison within American white male adolescents (Cohen et al 1996) also revealed that norms characteristic of a ‘culture of honor’ manifested themselves not only in the cognitions, emotions, and behaviors, but also in the physiological reactions of the subjects. Whereas Northerners were relatively unaffected when insulted,

Southerners were more upset (as shown by a rise in CORT levels), and more physiologically primed for aggression (as shown by a rise in T levels). BLOOD?

In another research, salivary T and CORT levels were also measured in 29 violent delinquents and 36 U.S. college students of a similar age. The delinquents had higher T levels but did not differ regarding CORT (Banks & Dabbs, 1996).

The first study to causally relate the administration of physiological doses of sex steroids to changes in aggressive behaviors in adolescents, focused on the role of sex steroids in the development of aggressive behaviors in hypogonadal adolescents (Finkelstein et al., 1997). Depo-testosterone (to 35 boys) or conjugated estrogens (to 14 girls) was administered in 3-month blocks alternating with placebo at three dose levels approximating early, middle and late pubertal amounts, and the Olweus Multifaceted Aggression Inventory was applied after each period. Results demonstrated significant hormonal effects on physical aggressive behaviors and aggressive impulses, but not on verbal aggressive behaviors nor on aggressive inhibitions in both boys and girls. The fact that physical aggression was affected whereas the verbal was not, could been explained at least partially by the changes in musculature also observed.

> Until this last decade, however, this eventual link between serum T and aggression has not been investigated in younger children, before the time of puberty. Interactions between social behavior of preschool five year old children (with a special focus on aggressive behavior) and T were analyzed at the Basque Country University, in Spain, measuring their saliva hormonal levels. A positive relationship between T and aggression was found only in boys, but not in girls, in the context of 'social interactions' (playful aggression: giving and receiving threat/aggression, defense/avoidance), but not in the context of play (Sanchez-Martin et al., 2000; Ahedo et al., 2002). These findings confirm also in small boys the suggestion that circulating T play an important role in all social behavior and not only in aggression; and that the development of sex-typed behavioral differences is already expressed on early postnatal life.

In pre-school children in a nursery situation, Corrine Hutt, at the University of Reading, has found that boys were overall more aggressive than girls; most aggressive acts tended to involve boys fighting with other boys. She argued that this sex difference in aggression was a consequence of perinatal hormone exposure in boys. But, measured serum T, sex hormone binding globulin (SHBG), DHEA, and DHEAS in 18 highly aggressive CD prepubertal boys, ages 4 to 10,

hospitalized for violent or unmanageable behavior, their comparison with a group of age and race matched controls from the same demographic area, screened negative for aggressive problems. No significant differences were found between aggressive and non-aggressive children for T, SHBG, DHEA, DHEAS, or ratios of combinations of these variables (Constantino et al, 1993).

Another study, that Melissa Hines's group is still carrying out at the City University of London on 200 children aged three and a half, suggests some relation between T levels and kinds of play. Although it does not directly focus on aggression, but rather on gender role behavior, it is interesting enough to be mentioned here because it is focused more toward an organizational pre-natal influence of hormones rather than the activational effects analyzed in the previously mentioned studies[55]. A 'masculine-feminine' score was compiled: the kinds of questions were whether they played with dolls or trucks, whether most of their friends were boys or girls, and whether they liked sport. Researchers noted a clear link between high T levels in a mother's womb and masculine behavior in girls. Girls exposed to higher doses of the male hormone were more likely to prefer toy cars to dolls, rough-and-tumble games to dressing up, and mud pies to tea parties. Conversely, the findings showed an association between low T in pregnancy and daughters who display typically 'girlie' behavior, such as dressing up in frocks and stealing their mother's make-up. However, social factors were also involved: tomboys tended to have older brothers and parents whose behavior was highly masculine. On the contrary, mothers' hormonal levels did not appear to have the same effect on boys, possibly because, since T levels are already high in unborn boys, small differences in the womb would have little extra effect. Boys may also be under greater social pressure to behave as boys should. Pregnant women with higher than average levels of the male hormone T in their blood thus have a greater chance of giving birth to a tomboy. Consequently, both Hutt's and Hines' findings may suggest that the exposure to higher levels of androgens around three months in utero can be at least partially responsible for increased rough and tumble play observed in boys and on girls with congenital adrenal hyperplasia (CAH), characterized by behavioral masculinization (see Berenbaum's research in the next section).

A similar approach was followed by Frank Sulloway's research concerning birth order and rebelliousness. It has been suggested that rebelliousness among latter born children

[55] The hormonal influence on behavior can be at least of two kinds: a) activational, steming from contemporaneous effects; or b) organizational, refered to structural changes occurred during pre- or peri-natal development; this early hormonal state would sensitize or desensitize the individual to hormonal circulation in adulthood (Leshner, 1978).

could be explained by higher T levels in aging mothers, rather than as an adaptation for sibling competition, even if the two explanations are not mutually exclusive. These higher T levels with age in women would not be in absolute terms, because an absolute increase seems oppositional to the finding of less T exposure in utero in latter born sons, but more accurately just higher T levels relative to decreasing E levels.

Finally, Stephanie van Goozen and her group in Utrecht (1998a) studied the relationship between androgens and aggression in prepubescent boys who were diagnosed as suffering from severe aggression and antisocial conduct disorders (CD), measuring their T, •4-A, and DHEAS levels. CD boys had significantly higher levels of DHEAS and marginally significantly higher levels of •4-A; moreover, DHEAS levels were significantly positively correlated with the intensity of aggression. But there were no differences in T. These findings question the usefulness of T as biological marker for aggressivity in early childhood.

Saliva levels of T were also compared with behavioral measures among 45 boys aged 5-11 years, 25 from a psychiatric group with disruptive behavior disorders and 20 from a normal control group. In the overall sample, T was associated with withdrawal and aggression (especially among older boys) and low social involvement in activities (especially among younger boys), contrary to van Goozen's conclusions. T was also higher in the psychiatric than in the normal group, but only among the older boys, aged 9-11. Whether girls would show similar relations, and whether T levels in young children predict later development and behavior, remains to be determined (Chancea et al., 2000).

6. Summary and comments.

Contrary to the consistent findings firstly reported in older adolescents (Olweus et al., 1980, 1988), the above mentioned studies and meta-analysis, as well as in other similar ones at pubertal and younger age (Granger et al., 1994; Scerbo & Kolko, 1994), yielded rather equivocal results, with a lack of links and less conclusive association between androgens and aggression. This may reflect the developmental maturational states of the different studies: T would reach levels consistent with the activational influences of hormones only at the late age stages. It may also indicate that T levels in adults are a consequence and not a cause of aggression (Brain & Susman, 1996).

In practice, the investigation of eventual correlations between gonadal androgens and aggression in prepuberal children did not start until last decade. Studies with five

years old children of both sexes found a relationship between T level in saliva and playfull aggression in boys, but not in girls, suggesting that the presence of T in males may play some rol in social behavior at early age. Several others, however, have found a significant higher T level in saliva of violent and CD boys only at 9/11 years of age, but not in earlier age. Another interesting finding is that pregnant mothers with high level of androgens in blood may be responsible, at least partially, of having behavioral masculinized daughters, as it has been already observed at 3'5 years of age; but apparently sons of these mothers did not show any specific behavioral change. This possible causal behavioral effect of the gonadal hormones has also been observed in hypogonadal adolescents of both sexes: the administration of sexual steroids during three months produced an increase in physical aggression, but not in verbal aggression.

In adolescents of different age, several reports mention a concurrent relationship between higher levels of T in blood and in saliva and provoked aggression [but not with unprovoked one] in boys, but not in girls. Puberal girls, however, show a positive relationship between higher levels of E and anger.

T could have a complex and indirect facilitatory effect on aggression being sensitive to psycho-social environmental influences. And E would also facilitate conflicts in both men and women, mediatizating the influence of the T (Niehoff, 1999; Susman et al., 1996b). The findings of social stress and aggression accompanying changes in T and CORT [antisocial behavior is associated with lower gonadal steroids and higher adrenal androgen concentrations in adolescent] support the hypothesis that social experiences and contexts of development affect hormonal levels. Therefore, a two way relationship between aggression and gonadal hormones might be suggested. Gonadal hormones, besides being only one of the multiple proceses -biological, social, and cognitive, to influence aggression in children and adolescents, might also be a signal of aggression, or even more precisely perhaps, of social success.

4.2. ADRENAL HORMONES

4.2.1. Brief information about hormones during human development.

The major hormonal product of the limbic hypothalamus-pituitary-adrenal (HPA) system in humans is CORT, a glucocorticoid secreted in a pulsatil manner by adrenal cortex, and controlled by ACTH from pituitary. It is secreted during fetal life and childhood at the same rate as in adults, proportionally speaking to body size. It has an

anti-inflammatory, an anti-stress, and an anti-growth action (this last effect may be through its inhibition of somatomedin actions and perhaps the secretion of GH itself (Tanner, 1962).

The adrenal gland also secretes some closely-related substances, called androgens because of their functions in most respects similar to T: namely DHEA, DHEAS, and •4-A. They are largely responsible for some of the puberal changes and for the maintaining of some secondary sex characters. This is specially true in girls; in boys, all these things are done more effectively by T. Their rate of secretion is very low during childhood, but a marked increase takes place at puberty, to somewhat higher levels in boys than in girls. Thereafter the amount declines and by ages 60 to 70 returns to pre-puberal values.

4.2.2. Report of the studies:

Low salivary **CORT** levels have been associated with persistence and early onset of aggression in normal school-aged boys. They triple the number of aggressive symptoms, and were named as most aggressive by peers three times as often as boys who had higher CORT concentrations in saliva at either sampling time (McBurnett et al., 2000). This same negative correlation between concentration of CORT in saliva and CD, has also been reported in preadolescent CD boys: children (9'6 years as average) with CD had lower levels of CORT in saliva than those without CD (McBurnett et al., 1996; Vaniukok et al., 1993).

Virkkunen (1985) also found that those habitually violent adult males who showed aggressive CD during childhood, excreted only about half the amount of free CORT compared to others. This suggests that CORT in childhood would be a risk factor for chronic aggression: children with very low levels of CORT were almost always highly aggressive. Contrary to the hypothesized inverse relationship between CORT secretion and aggressive behavior suggested by these previous results measuring saliva CORT levels, no significant difference was found between 7 to 11 year old aggressive and non-aggressive boys with Attention Deficit Hyperactivity Disorder (ADHD) whose hormonal levels were measured in plasma (Schulz et al., 1997).

On the contrary, under stressful circumstances, higher levels of adrenal androgens and lower E are secreted suggesting that stressful experiences may play a role in the development of the gonadal axis. Consequently, given that the best known HPA hormone involved in modulating adaptation to stress is CORT, in a psychological stress paradigm saliva CORT concentrations were positively related to conduct problems, but only when boys showed 'very high levels' of

conduct problems over time (Lahey et al., 2002). High levels of CORT and larger increases of it from morning to afternoon have also been found in children with anxiety and depression (McBurnett et al., 1992), as well as in children with more immature social skills, more emotionally negative and with less self-control (Dettling, Gunnar, & Donzella, 1999; Dettling et al., 2000). A higher adrenal androgen concentration thus would be an index of higher stress (Nottelmann et al., 1987; Sapolsky, 1991).

In an attempt to prove the hypothesis that social experiences affect hormonal levels, saliva samples of T and CORT were taken in disruptive children, aged 7 to 14 years (Scarpa & Kolko, 1996). Moderate positive relationships between T and staff-rated aggression, and between CORT and parent-rated aggressive responses to provocation, as if they would 'internalize' their abused experience, appeared in all disruptive children, regardless of age. A significant negative relationship was also found between CORT and staff-rated inattention/overactivity (Scerbo & Kolko, 1994).

Other studies in antisocial youth failed to find any link with CORT levels, though. In an above mentioned research, measuring salivary T and CORT levels in 36 college students and 29 delinquent participants of a similar age, T levels were higher in violent delinquent adolescents than in normal college students; but CORT levels did not differed in any of the samples (Banks & Dabbs,1996; Kruesi et al., 1989; Targum et al., 1990).

Contextual and individual differences also play an important role in hormonal secretion. An already mentioned study with American male adolescents stressed how cultural differences could influence physiological reactions to insults. Southerners, heavily influenced by a characteristic 'culture of honor', were more upset, as shown by a rise in CORT levels, and more physiologically primed for aggression, as shown by a rise in T levels, whereas Northerners were relatively unaffected (Cohen et al., 1996).

Another two studies of Gunnar's group at Minneapolis considered the relations between temperament, social competence, and levels of a stress-sensitive hormone CORT in preschoolers, from birth to approximately 5 years of age. In both studies, salivary CORT was sampled daily for the initial weeks of school year (Group Formation period) and for several weeks later in the year (Familiar Group period). For each child, two measures of CORT activity were examined (separately for each period) based on the distribution of CORT levels across days: (a) median CORT (50^{th} percentile) and (b) CORT reactivity (the difference between the 75^{th} and 50^{th} percentile). Median CORT was modestly stable across periods, but CORT reactivity was not. Children who showed high CORT reactivity (75^{th} minus 50^{th} percentile > or = 0.10

micrograms/dl) during the Group Formation period but low-to-normal CORT reactivity during the Familiar Group period were outgoing, competent, and well liked by their peers. In contrast, children who changed from low/normal to high CORT reactivity and those who maintained high CORT reactivity from the Group Formation to Familiar Group period were affectively negative and solitary. Children who showed high median CORT during the Familiar Group period or over both periods scored lower on a measure of attentional and inhibitory control. Together, these accumulated findings suggest that relations among temperament, social competence, and neuroendocrine reactivity reflect both individual and contextual differences: children with negative emotional temperaments may be most likely to exhibit elevations in CORT under conditions of less than optimal care, whereas young children under neglectful and abusive care often evidenced reduced rather than increased CORT levels (Gunnar, & Donzella, 2002; Gunnar et al., 1997).

Large individual differences were also remarked in another study by van Goozen's group (1998b) with oppositional defiant disorder (ODD) prepubertal boys, finding that CORT levels were overall lower during stress (provocation and frustration).

Let us finally just mention a new promising approach, exploring associations among T and CORT and children's family relations and behavioral development. This ongoing study at Penn State University, involves 400 families. Alrhough still in its preliminary stages, it has already revealed that parents' and children's CORT levels may be linked to parenting behaviors in ways that in turn affect social and emotional development (Granger, unpublished communication; see also Kavoussi et al, 1997) . A deeper knowledge of both hormones could hopefully give some light on the linkages between biology, behavior and environments within the context of the family.

Aggression and antisocial behavior have been also found associated with higher **adrenal androgen** concentrations in adolescents. In the NIMH-NICHD collaboration already mentioned in the previous section on gonadal hormones, aggression attributes were examined in relation to a variety of endocrine changes at puberty. Adjustment problems were also associated with higher •4-A and relatively lower sex steroid levels, a profile characteristic of later maturation (Nottelmann et al., 1987) and of response to stress. This may suggest that some individuals reflect a predisposition to heightened biological reactivity to environmental challenges, which undoubtedly are plentiful during adolescence (Susman et al., 1996b).

Another aspect of the same research was the relation

between endocrine changes and the expression of anger of young adolescents interacting with their parents during problem-solving tasks. For boys, the expression of anger was associated with higher levels of DHEA and lower levels of DHEAS. For girls, the expression of anger was related to higher levels of •4-A. In brief, levels of hormones that increase at puberty were associated with adolescent expression of anger while interacting with their parents (Inoff-Germain et al., 1988).

A different study focused among other aspects on whether hormonal pubescent changes were more likely to be associated with negative affect. It included a hormonal assessment of LH, FSH, E, T, DHEAS and CORT on 10- to 14- years-old girls. Results showed an association of aggressive affect with DHEAS, but no relations with T were found (Brooks-Gunn & Warren, 1989; Warren & Brooks-Gunn, 1989).

The relationship between different degrees of aggressiveness and neurotransmitter-neuroendocrine responses to stress has also been analyzed in 30 male peripuberal adolescents. Plasma concentrations of Norepinephrine (NE), epinephrine (EPI), ACTH, CORT, GH, PRL and T were measured immediately before the beginning of some psychologically stressful tests and at their end, 30 min later. A high-normal aggressiveness was associated with significantly higher basal concentrations of NE, ACTH, PRL, and T and with a significant increase of GH responses to the stressful stimuli (Gerra et al., 1998).

Berenbaum's group has published two interesting papers about the contribution of early androgens to variability in human aggression. One of them reported their research on CAH girls, who were administered CORT in the prenatal and early postnatal periods. The assessment of aggression by the Multidimensional Personality Questionnaire (MPQ) and parents rating, showed that females with CAH had higher aggression than control females, although the difference was significant only in adolescents and adults (Berenbaum & Resnick. 1997). In a second more recent study, it was observed that females with CAH due to 21-hydroxylase deficiency were masculinized and defeminized: they played more with boys' toys, were more likely to use aggression when provoked, and showed less interest in infants than normal ones. This sex-atypical behavior was significantly associated with degree of inferred prenatal, but not postnatal, androgen excess. This finding supports the idea that behavioral masculinization in girls with CAH results from high levels of androgens during fetal development and not in postnatal life. The fact that aggression was not consistently associated with indicators of prenatal or postnatal androgen excess, probably was due to the lack of reliability in its measurement (Berenbaum, 1999; Berenbaum, Duck & Bryk. 2000).

Van Goozen's team (2000) has also focused their research on the relationship between androgens and aggression in children with antisocial behavior. One study analyzed prepuberal boys who were diagnosed as suffering from severe aggression and antisocial behavior. CD boys had significantly higher levels of DHEAS and marginally significantly higher levels of •4-A; but there were no differences in T. Moreover, DHEAS levels showed significantly positive correlationship with the intensity of aggression. This suggests that adrenal androgen functioning plays an important role in the onset and maintenance of aggression in young boys. Another study, in 24 children with ODD, showed a specifically elevated adrenal androgen (DHEAS) . And similar results were observed in CD boys under 14 years: they had higher circulating levels of DHEAS correlated with 'disruptive behavior', and of ACTH with restless-impulsive ratings (Dmitrieva et al., 2001). It is speculated that the mechanism could be a shift in balance of ACTH-beta-endorphin functioning in the hypothalamic-pituitary-adrenal axis due to early stress or genetic factors (van Goozen et al., 2000).

4.2.3. Summary and comments:

Some above mentioned studies in normal (Nottelmann et al., 1987; Susman et al, 1987; Inoff-Germain et al., 1988) and abnormal (van Goozen et al., 1998a, 2000) children of both sexes showed consistent relations between aggression and other negative attributes (anger, antisocial behavior, delinquency, rebelliouness, CD) with higher levels of hormones of adrenal origin, such as DHEA, DHEAS and •4-A. One of these papers, however, related the expression of anger with lower serum levels of DHEAS in boys (Inoff-Germain et al., 1988). This association has been described not only in adolescents (15 to 17 years of age) but also in preadolescents (5 to 11 years of age). This suggests that early adrenal androgens contribute to the onset and maintenance of human aggression. Moreover, the consistent relationships of anger with •4-A, a major source of androgens in females, indicate that androgens of adrenal origin, as opposed to gonadal origin, may play a role in females aggression.

The hypothesis that social experiences affect the function of both the HPG and HPA axes has been already sugested, after observing that antisocial behavior is associated with lower gonadal steroids and higher adrenal androgen concentrations in adolescent. Psychosocial environmental stressful experiences can affect HPA hormones, involved in modulating adaptation to stress, and in this way they may exert a major impact on gonadal hormonal excretion, playing a final role in aggression. This influence on the hormonal level shows individual and contextual differences (i.e., temperament and

family), as it has already been observed in preadolescents (9-11 years of age).

Imbalances in the adrenal axes thus may have neurotropic repercussions in development: stress and aggression in adolescents may suppress the gonadal axis leading to alterations in timing of puberty, whereas social success during adolescence may have the opposite effect, leading to higher levels of gonadal hormones (Susman et al., 1996b).

The typical adrenocortical response to stress is a higher secretion of CORT, which in turn would moderate the T-aggression relationship. On the contrary, a low HPA axis activity seems associated with chronic aggressive and antisocial behaviors, that begin early in life (it has been found to be present already in 9'6 years old boys) and persist into adulthood. The presence in children of low CORT levels in saliva might be interpreted as an eventual risk factor for chronic aggression in adulthood. This correlation with severe and persistent aggression has been reported analyzing CORT levels in male children and adolescents, normal and CD ones. In adulthood CORT surges were also correlated negatively with evocations containing defensive elements and with rage.

In summary, there is an important, although indirect, role for HPA axis on the onset and maintenance, of persistent violent and antisocial behavior in young boys, and viceversa.

4.3. PITUITARY HORMONES

4.3.1. Brief information about hormones during human development.

The pituitary gland secretes two hormones, known as gonadotrophins, within the hypothalamic-pituitary-gonadal axis: LH and FSH. a) LH: in males, it is secreted in a pulsatile fashion; in females in a cyclic fashion, interacting with FSH to control the menstrual cycle; and b) FSH: in males, it causes growth of sperm and the seminiferous tubules, with a consequent testicular enlargement; in females, the eggs grow under its influence (this explains why, in girls, FSH is especially high around 20-30 post-menstrual weeks, because much of the initial growth of eggs takes place then, during late fetal life). The activity of this gland depends on the age of the host rather than of the organ itself; its full activity is inhibited in immature individuals (Donovan & van der Werff ten Bosch, 1965).

Finally, just to mention another pituitary hormone, which association with aggression has also been described in humans

and non-human primates: the PRL. PRL is necessary for the secretion of breast milk in the adult, but seems to play little part, if any, in the childhood. In boys, no change of its blood level is observed at puberty; but in girls, a small rise occurs in late puberty.

4.3.2. Report of the studies:

In a study on the relations between adrenal and gonadal hormones and aggressive attributes in adolescents, the levels of **gonadotropins** were also measured in the already mentioned NIMH-NICHD sample (ages: 9-14 years). The hypothesis was that if gonadotropins mediate the effects of stress on T, one would expect to see lower levels of LH and FSH in adolescents with aggression problems, and higher ones in highly socially competent adolescents. Higher scores of rebellious attitude in boys related to lower levels of FSH, but unexpectedly also to higher levels of LH and of DHEA (Susman et al., 1987). From the same sample, Nottelmann et al., (1987) reported that adjustment problems were also associated with a similar hormone profile to the described for boys with aggressive attributes. And in another paper (Susman et al., 1996a) quite reverse results to the hypothesized are reported: boys with aggressive tendencies and a higher rebellious attitude were higher on FSH, contradicting the hypothesis that stressors suppress the gonadal axes.

An inverse correlation between **PRL** and aggression was observed in macaques (Botchin et al., 1993), and both tendencies have been reported in adult humans. Sobrinho et al. (2002), studying neurovegetative responses to emotions elicited during a hypnoidal state, have just reported that rage had a marginally significant positive association with PRL surges. And PRL responses to serotonin agonists, such as d,l-fenfluramine or meta-chlorophenylpiperazine, (this response to serotonin agonists is an index for assessment of central nervous system serotonergic activity and responsivity), were also found to be positive correlated with indices of trait hostility and impulsiveness in patients with substance abuse (Fishbein, Lozovsky, & Jaffe, 1989; Handelsmana et al., 1998). On the contrary, another PRL [d,l-FEN] challenge study conducted in mood and personality disordered patients, found that PRL responses were reduced in those patients with increased irritability, impulsive aggression, verbal hostility, and direct aggression (Coccaro et al., 1989), as well as in those with a previous history of suicide attempt (Coccaro & Kavousi, 1996; Lopez-Ibor, Lana, & Saiz, 1990) . A recent study in a nonpatient population reported basic neurobehavioral differences between sexes: whereas in men, peak PRL responses to fenfluramine correlated significantly with an interview-assessed life history of aggression, no significant relationships were observed across

all women, although subanalyses restricted to postmenopausal subjects (in whom ovarian influences on PRL secretion may be mitigated because of diminished estrogen) showed a pattern of behavioral associations somewhat similar to that seen in men (Manuck et al., 1998).

Studies on this relationship in non-adult humans also reported mixed results. One reported no difference in PRL[d,l-FEN] responses between aggressive CD children and adolescents compared to healthy subjects (Stoff et al., 1992). In another already mentioned study, dealing with different degrees of aggressiveness and neurotransmitter-neuroendocrine responses to stress in male peripuberal adolescents, high-normal aggressiveness was associated with significantly higher basal concentrations of PRL (Gerra et al., 1998).

4.3.3. Summary and comments:

The association between aggression and some pituitary hormones, such as gonadotrophins and PRL has also been described in non-adult humans, but for the time being the reported results in humans are still mixed and confusing. This failure to clearly support hypothesis may reflect the reality that psychoendocrine processes are more complex that merely a one-to-one coordinate relation between a hormone and a behavior.

5. FINAL COMMENTS

There have been few systematic studies to explore the relationship between aggression and hormones. Most research on this topic has tried to uncover direct links between measures of biological status, such as levels of the hormone T and individuals' activities, such as their levels of aggression, risk-taking and nurturance. In addition, there have been no well-designed studies of the interaction between biology and an individual's environment in the genesis of aggressive behavior. Most studies of aggression in humans focus on individual different conditions, wrongly assuming that hormonal levels are stable over time of day, failing to consider periods of development in which they act, and forgetting that the biological and behavioral responses to androgens are context-dependent (Book et al., 2001; Rubinow & Schmidt,1996; Susman & Shirtcliff, 2002). Some inconsistencies in results thus should be due to the different ages of samples. The assessment of the longitudinal stability of the hormonal levels has also failed. There are not longitudinal data on whether the status of being in the top 10% of T distribution in childhood is predictive of being in the top 10% of T distribution in adulthood (Constantino et al., 1993; Susman et al., 1996b).

There are also disputes about eventual differences between the results obtained according to the methods employed: *in saliva* or *in serum.* Some authors point out that the focus on *serum* hormonal level may be a significant factor in these mixed results, because it does not recognize that intracellular events constitute critical steps in the production of hormonal effects, including behavioral facilitation (Simon et al., 1996). According to them, circulating hormonal levels may not be the appropriate analysis with respect to physiologically relevant behavioral effects; for instance, a product of T metabolism might be the critical molecule in mediating aggression and hormones (Susman et al., 1996a). As a matter of fact, the hypothesized inverse relationship between CORT secretion and aggression, suggested by results obtained measuring saliva CORT levels, was not found between aggressive and non-aggressive in 7 to 11 year old boys with ADHD, whose hormonal levels were measured in *serum* (Schulz et al., 1997).

We also want to stress that the link between hormones and aggression shows a reciprocal and circular interplay between both. In the development of aggression there are involved psychosocial factors, linked to the metabolic and physiological pathways, and with genetic characteristics. Yet we tend to think of aggression as the effect of our biology - i.e. hormonal influence on aggression, whereas it can also be a causal component, influencing hormones. For example, one's own aggression creates stress which in turn can cause changes in adrenal steroids (Grisso, 1996); or, also, the antisocial behavior may influence the activity of the HPG axis (McEwen, 1992). Aggression, as well as other adjustment problems, may suppress the gonadal axis (Susman et al., 1996b). Hormones, likewise, may be considered potential causes, consequences, and mediators of aggression. For example, behavioral experiences and sociocultural context lead to endocrine changes that, in turn, influence the occurrence of aggression (Andreu et al., 2000).

T is the hormone most studied in association with aggression in adolescents, but recent results are less conclusive than the first findings (Olweus et al., 1980, 1988) suggested. For instance, one paper (Sanchez-Martin et al., 2000) concluded that T could be a useful biological marker for serious aggression (and behavioral patterns reflecting different levels of sociability) in preschool boys; but another one (Schaal et al., 1996), after revealing that T was positively associated with social success rather than with physical aggression, suggested that T level could be a marker of social success in a given context, rather than of social maladjustment. Perhaps the identification of biological laboratory markers is not a clinically useful strategy at this time for a biological substrate so complex as the one for aggression (Schulz et al., 1997). This

inconsistency has led to the conclusion that gonadal hormones are only one of a myriad of influences on aggression in adolescents. For example, they may reflect the developmental maturational status: in older adolescents, T may have reached a level consistent with the activational influences of hormones.

This suggests that T may have a relationship with sexually dimorphic behaviors, in particular with the expression of aggression, usually different in boys and in girls (Harrisa, 1999; Ramirez, 1978). Until around 10 years of age, the typical way of solving conflict situations is common to both sexes: open and direct physical or verbal aggression. A couple of years later, with the arrival of puberty, strategies become quite characteristic of each sex. Girls stop shouting and hitting and interchanging strikes; direct physical aggression begins to be substituted by indirect emotional aggression; i.e., hidden methods are preferred to direct encounters: ostracism, contempt, gossiping… On the contrary, adolescent males seem to be more impatient and irritable; they tend towards risk-taking behavior, unable to understand danger, and cravings for thrills and glory[56]. With maturation a general increase in the use of indirect aggression results, and in adulthood the prevalent type becomes a more subtle form of aggression, known as 'social' aggression (Björqvist et al., 1992; Owen et al., 2002; Vaillancourt et al., 2002). Thus both sexes are equally aggressive, but they express it in different ways: for instance, whereas men may express their hostility at work by shouting at the secretaries, women rather tend to do it indirectly, spreading rumors, 'forgetting' important tasks, and so on.

There is a close relationship therefore between the developmental onset of steroid hormones and the onset of aggression and violence in adolescent boys, with rapid changes in both hormones and behavior (Susman et al., 1996a). But it does not mean that sex differences arise just at the time of sexual maturation; they begin much earlier in life. The findings of the Basque University's group suggest that the development of sex-typed behavioral differences is correlated with circulating T, and it is already expressed on early postnatal life, as soon as infants have appropriate

[56] Over thousands of generations, males seem to have been bred to be thrillingly, gloriously, and expendably stupid at adolescence. Various communities cause their young men to endure a startling and often gory array of harassing rituals and trials in order to become acceptable adults. In his autobiography, Nelson Mandela says that only after his tribal initiation at the age of 15 did he feel ready to assume the chieftaincy he inherited. Many of us have been witnesses of young men physically abused by fraternity brothers during hazing and initiations. Often, only when they have made their bones in some grim initiatory expedition are young men able to contemplate the next steps of courtship and marriage. We have to consider however that these rights *de passage*, characteristically of youngsters, have also a positive side: the channeling of those forces that are coming at puberty.

motor abilities for interacting. Berenbaum's abd Hines' findings also suggest that the origin of these gender-based differences in aggression must lie in neuroendocrinological events occurring during prenatal life, such as the exposure to higher levels of androgens around three months in utero. This produces different dispositions in boys and girls, which begin to be shown as soon as children are able to interact, and become more accentuated by age (Archer, 2002).

There is also no reason to expect a one-to-one relation between the increase of T and that of aggression at puberty, and even less a direct hormonal effect, because T is affected by other endocrine systems and is aromatized to other hormones. Also it may not be the active substance implicated in aggression. Brain and Susman (1996) offer a developmental explanation of these inconsistencies, suggesting that T levels may be a consequence and not a cause of aggression in adults.
Even more, if some hormones can affect aggression and violence, they do not directly cause them. T, for example, does not directly put people to fight or to be violent; this only occurs in response to some provoking environmental stimuli. But having a particular hormonal state may predispose the individual to be more or less aggressive when exposed to those stimuli.

The increase of T at puberty might indirectly interact with the psycho-social context (cognitive processes, emotions, family and peer configuration, personal life experiences…), in both ways. For example, winners and losers show different hormonal patterns (Rose, 1980). Watching one's heroes win or lose has different physiological consequences, including changes in the production of endocrine hormones, that extend beyond changes in mood and self-esteem. Basking in reflected glory, in which individuals increase their self-esteem by identifying with successful others, is usually regarded as a cognitive process that can affect behavior. It may also involve physiological processes, as has been presented in a study of changes in T levels among male fans watching their favorite sports teams win or lose, either directly or on television (Bernhardt et al., 1998). Participants provided saliva T samples before and after the contest. In both situations, mean T level increased in the fans of winning teams and decreased in the fans of losing teams. Adolescents thus may try to gain social status through dominance and leadership, via aggressive and assertive behavior. If successful in these pursuits, T is expected to increase. If unsuccessful, T is expected to decrease, because of their overall stress-related aggression problem. It is further expected that the longer the duration of social stress the lower the concentration of gonadal steroids.

Assuming that T and CORT are two hormones which hold promise to shed light on linkages between biology, behavior

and environments within the context of the family, an important next step would be to examine the influence of both on family dynamics and subsequent child development, and how family relationships and experiences in turn affect the way that biological factors manifest themselves. In one family, for example, aggressive impulses may be moderated or channeled into constructive domains, while in another, aggressive acts may be unchecked and destructive (Booth et al., in progress). Stressors thus appear to affect hormone concentrations in humans, even if these effects have received only minimal research attention.

Despite the progress of the last few years, the links between hormones and childhood violence remains woefully understudied. There is a need for more research into the comprehension of how biology works on the development of our behavior. It would provide physicians and psychologists with increased understanding and viable treatment potential for the violently aggressive patient (Strefling, 1990). This will require models that incorporate cellular aspects of steroid hormone action, including metabolism, chemical balance/imbalance, receptor function, and gene regulation. Our present knowledge on this topic is only in its nascent stage, but it will expand. And we hope that it will help to restore to individuals more control of their own destinies, with a consequent better choice and freedom.

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V. CULTURAL AND GENDER DIFFERENCES IN AGGRESSION AND ANGER

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GENDER DIFFERENCES IN SOCIAL INTERACTIONS OF CHILDREN: A NATURALISTIC APPROACH*

J. Martin Ramirez & Diana L. Mendoza

ABSTRACT

Differences in the social behavior of 6- and 7-year-old children of both sexes were analyzed by ethological methods. Observations were made while children attended class in a regular first-grade school. The incidence of general activity, social interaction, and open hostile activity was higher in boys. No significant differences between sexes were observed in cohesive, ambivalent, and flight components of behavior. Children of both sexes interacted more with girls. These results seem to indicate that gender differences in the way children interact with their peers are more evident during aggressive encounters and that they depend not only upon the sex of the actor, but also upon the sex of the receiver.

INTRODUCTION

Research on sex-related issues has hardly been quiescent during the past years. Considerable activity has led to genuine insight into the influence of sex as a subject variable, the contribution of individual different traits, and the pervasiveness of gender stereotypes (Deaux, 1984). What are the main gender differences in behavior, if any, and when do they appear in the ontogenetic development of human beings? After reviewing more than 1,400 published studies, Maccoby and Jacldin (1974) concluded that very few sex differences have been substantiated. Their conclusions, however, have been challenged by other authors (such as Block, 1976).

Although numerous situational factors appear to elicit or minimize gender differences (Frodi, Macaulay, & Thome, 1977), sex-related phenomena cannot be qualified merely by "molding" situational pressures. They are also influenced by individual biological constraints and by personal choices

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based on past interactions and future expectations (Hinde, 1982, 1984; Hinde & StevensonHinde, 1976; Mendoza & Ramirez, in press; Ramirez, 1978, 1984), and ultimately they are understandable only if analyzed in the context of social interaction (Dunn, 1976)'. As Hinde (1982, 1984; Hinde, Easton, Meller, & Tamplin, 1983) pointed out, individuals behave differently according to where they are (social situation), whom they are with (presence of adults, and even of different kinds of peers), and their own individual characteristics and cultural backgrounds (social class, ethnic group values and norms, and expectations). In sum, human relationships vary in a complex way.

Social interaction could be assessed in a variety of ways, such as by reports, verbal interviews or questionnaires, and direct observations of behavior. Verbal interviews alone provide a relatively poor index, especially at early ages, and laboratory observations of a selected subject population are not exempt from constraints and pressures; for instance, as Eagly (1983) observed, these experimental situations may emphasize the subject role to the exclusion of more complex sex-related roles that may be prevalent in the field, and may even put more stress on what a subject can do than on what he or she will do, given free choice, in a more natural environment. Therefore, the essence of ethological research must be to observe, to note, to question, and to postulate particular phenomena first in the real world, that is, individuals' interactions within a naturalistic setting. Only after we have gotten a clear picture of what has occurred there—and only as needed—can we utilize experimental settings (Omark, 1980). The advantage of recording behavioral interaction in a context appropriate to the situation in which it occurs (Attili, 1984) does not mean that human ethologists should restrict themselves to naturalistic observations; on the contrary, since all scientific disciplines are defined by multiple methodologies, we should complement them with the other means at our disposal.

This paper will consider sex-of-subject behavioral differences through the traditional approach of considering sex as a subject variable. Our present effort is limited to: (1) discussing some of the methodological procedures involved in ethological observations of spontaneous behavior among children in a natural school setting; and (2) analyzing their nature, that is, what they were doing together (content), degree of interaction (frequency), and who did what to whom (directionality).

METHOD

Subjects

The sample consisted of 34 'non-problem' children of both sexes (17 boys and 17 girls), between 6 and 7 years old, and attending a regular first-grade public school in an

industrial area of Madrid. Socio-economic level and occupation of parents indicated that they belonged to the lower middle class.

Procedure

Since behavior may vary throughout the day and even the week, and may depend on the weather, among other biorhythmic and environmental circumstances, observations were conducted in a classroom on consecutive weekdays, at three different times of the day (early morning, late morning, and AlterNet) over a period of I month, during the spring.

In order to get more complete information about the observed population, two matrix completion sampling methods previously used by other researchers (Altman, 1974; Behoff, 1979; Blurton-Jones, 1972; McGrew. 1972; Michael & Crook, 1973) were applied: (1) individual focal sampling, that is, recording all the specific behaviors of each individual, and (2) event sampling, that is, recording the frequency of the different behavioral patterns in a population without taking into account the performer.

During previous field observations of non-human and human primates (Mendoza. 1982; Mendoza & Ramirez, 1984, in press), a coding system was developed and a repertoire of 47 specific categories that described various behavioral events was selected as a checklist for the current research and grouped under five headings: (I) "neutral" — approach, move away, verbalize, vocalize, walk, jump, run; (2) "ambivalent' '— yawn, rock, touch, digit or object suck, rough-and-tumble, chew lips; (3) "hostile" —frown, interfere, displace, tongue showing, point at, restrain, object struggle and break, scream, pinch, bite, intentional hit, hit, punch, step, kick, push and pull, wrestle, chase; (4) "flight' '— crouch, flinch, flee, pout, cry; and (5) "cohesive—smile, laugh, hug, pat. Most of these behavioral events had been defined elsewhere (Blurton-Jones, 1972; McGrew, 1972). The behaviors exhibited were coded according to a previously developed system, recording the actor and the target of each interaction as well as their sex.

At the inception of the project, two arbitrary decisions were made: (1) to use a unit of analysis, that is, the sampling period for each focal individual (Altman, 1974), of I mm; and (2) to consider a minimum sampling of 60 mm of observational recording of each subject as a baseline measure sufficient for a stable estimate of behavioral events. A total of 1,782 mm of videotaped social interactions were obtained during the period of study: Of this total, 926 mm were of male actors and 856 mm of female ones. The observation of the different subjects was done in random order. During recording of the data, each child sat in the classroom between two other children of the opposite sex. For easier identification of the focal individual, each subject was assigned a fixed number, which was placed on his/her front and back.

Observers

Observations were performed by two persons through a one-way mirror (to keep the observers out of the view of the children). Each observer was equipped with a recording keyboard and audiophones with a chronometrical device for timing the 1-mm intervals.

Training in the use of the code system required approximately 15 h and involved practice sessions of viewing

and coding videotapes of social interaction. After that, the person being trained attended the school with an experienced observer; both of them coded the behavior observed in the children. Training continued until they had reached a minimum agreement of *75%*. The overall percenta2e of a2reement was calculated by summing the events observed for all children in a session for both observers and dividing that into the total number of events for which they were in agreement (Patterson & Cobb, 1973). During sessions, an inter-observer agreement of around *85%* was obtained.

During the few contacts of the observers with the children, no services were offered and no conversation was exchanged with the children. The first several days of observation at the school were spent simply looking at the behavior of the children and sham recording. This was done not only for technical reasons, but also to habituate the children to the observers' presence. In fact, after a very few sessions, the children displayed no reactions to the observers' presence: Most of them merely glanced in the observers' direction upon entrance. Therefore, no distortion was detected in social interactions as a function of the observers' presence at the school.

Data Analysis

To avoid any distortion in the data, after the field observations were collected the videotapes were rerun until all observers agreed in their coding. Only the data for children who were present for at least 75% of the sampling period were analyzed. The data for the different behavioral categories were subjected to an analysis of variance (ANOVA) for the several sessions, and the frequencies with which each behavior occurred in both groups were subjected to a chi-square analysis, with appropriate correction or Fisher's exact chi-square when required. Chi-square values determined whether the gender differences in a given behavior were significant at $p < .05$.

Although not included in the present paper, other assessment procedures, such as tests, questionnaires, and several psychophysiological measures were also applied to the children, and there were interviews with their parents and teachers to obtain more complete information on the sociobiopsychological peculiarities of the subjects.

RESULTS

Absolute frequency of interactions tells us how much social behavior a person shows. When we grouped all the behavioral categories observed by gender, we found that the incidence of social interactions was significantly higher in boys (84.71%) than in girls (74.30%), and that both boys and girls tended to direct their behavior more than twice as frequently toward girls (67.28% of the total interaction) than toward boys (32.72%).

What proportion of their interactions at school were hostile? Boys were always more aggressive (21.12%) than girls *(14.95%)* and both sexes directed their hostility significantly more often toward girls. The quality of the hostility also differed according to the subject's sex. Physical contact directed toward an opponent or toward a

"scapegoat" (redirected aggression) was typical of boys. Girls, on the other hand, made less use of physical contact, carrying out their behavior by gestures; furthermore their hostility was often redirected toward inanimate objects or was expressed by trespassing on the opponent's personal territory.

Table 1
Sex Directionality for Different Types of Social Interactions in Normal Children

Types of Behavior	Boy to Boy			Boy to Girl			Girl to Boy			Girl to Girl		
	Raw Score	Percent		Raw Score	Percent		Raw Score	Percent		Raw Score	Percent	
Neutral	177	19.12	p <. O1	293	31.64		108	12.62	p <. O1			
Ambivalent	19	2.05	p >. 05	30	3.24		12	1.40				
Hostile	30	4.10	p <. O1	158	17.06		536.19		p <. O5			
Right	0	0.00	p <. O5	6	0.44		0	0.00	p <			
Cohesive	65	7.02	p >. 05	54	5.83		48	5.61	p >			
Total	229	32.29	p <. O1	541	58.21		231	25.82	p < .0			

Note — Total observations: boys = 926; girls t = 8.56

A series of behaviors bearing a deep social meaning such as approaching, moving away, and verbalization were grouped under the label of "neutral" behaviors Verbalization failed to reveal any difference between boys (24.51 %) and girls (24.65%). However, boys approached and moved away from their peers approximately one-thin more often than girls (boys: 20.09% and 6.16%; girls 14.60% and 4,56%, respectively). In all these cited "neutral" behaviors, the actors, whether boys or girls preferred to direct their interactions toward girls rather than toward boys ($p < .001$).

No significant gender differences were observed either in cohesive behaviors or in ambivalent ones. Flight was practically nonexistent, perhaps partially because observations were made during class hours.

DISCUSSION

Our current data observed in 6- and 7-year-old schoolchildren support the gender differences in behavior that have been widely reported in a variety of cultural settings. Hinde (1984) observed marked sex-role differences in children between the ages of 42 and 50 months. Ant Freedman (1980) described subtle differences even at birth: Boys cry more, respond less to vocal cajoling and require more holding, whereas girls start life more cuddly, mold into the arms better, and kick less, The significantly higher

overall behavioral activity observed in our sample of boys confirms earlier findings by Draper (1980). He observed that boys physically cover more ground than girls in the same amount of time (i.e., are more active than girls). Our most noticeable result was the social "attractiveness" of girls; that is, children of both sexes preferred to interact with females.

Our analysis demonstrates that boys exhibit a higher rate of hostile behavior. This is in line with most studies on aggressiveness: Boys arc more likely to act out aggressive displays, tending to be at the top of a toughness dominance hierarchy (Barrett, 1979; Maccoby & Jacklin, 1974, 1980; Parker & Omark, 1980; Strayer & Strayer, 1980). Cross-cultural studies (Freedman, 1974, at 5 to 7 years; Omark, 1980, at 4 to 10 years; Ramirez et al., 1984, at 6-7 years; Whiting & Pope, 1973, at 2 to 10 years) also have reported gender differences in the physically aggressive behavior of children: Males engaged more in mock fighting, rough play, and verbal insults. Moreover, convincing evidence seems to appear quite early on in ontogenetic development. According to the ethological findings of gender differences in preschool aggressive interactions, males seem to be born with a lower threshold for aggressive responsiveness (Blurton-Jones, 1967; Hinde, 1984; Knudson, 1973; McGrew, 1972).

Our findings diverge from the popular thinking that girls talk more than boys, and from the results of earlier studies showing that girls are more socially oriented right from the start (Freedman, 1980; McGuinness, 1980). The reports by Knudson (1973) and McGrew (1972) on preschoolers' interactions showed typically non-agonistic interactions among females. In these studies, moreover, only male-to-male interactions were unfriendly. Our children, however, did not express significant differences in approach and verbalization, both sexes participating also in hostile interactions. What seems more interesting is that most directed "hostility" toward girls, contradicting Attili and Cavallo-Boggi's (in press) observation of preschoolers that aggressiveness is directed more toward like-sex individuals than toward opposite-sex ones. Although such studies need to be replicated in the future, a possible explanation occurs to us: Both the ages and the social contexts of the subjects varied,

Here we have focused on documenting sex differences in social interactions and have demonstrated, as did Attili (1984), that these differences depend not only upon the sex of the actor but also upon the sex of the receiver. Although we agree with Attili about the importance of examining factors beyond the overall frequencies and asking how the social behavior is affected by a variety of independent variables, because this depends on different motivational factors, we also share Hinde's (1982; Hinde & Stevenson-

Hinde, 1976) hope that a naturalistic approach may stimulate and provide a starting point for the understanding of the social-sexual relationships.

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AGGRESSION AND COHESION *IN SPANISH AND MEXICAN CHILDREN*[*]

Diana L. Mendoza and J. Martin Ramirez

INTRODUCTION

The present data are part of a more general research project concerned with social interactions of children from a large number of societies. Groups of children from similar cultures will be compared in different settings (Hispanics and Anglo-Saxons in Europe and in America), as well as groups with different cultural ancestry in the same setting (Hispanics and Anglo-Saxons in California). We try to study their social interaction under natural-conditions because it is essential in shaping appropriate behavioral stability in children. We also try to understand their social behavior during play, because play patterns might be valuable in interpreting the social relationships of immature individuals. In addition, play can also contribute to the development of the socialization process of adults.

In this study we compared a limited sample of children in Spain and in Mexico. Both countries share not only the same language, but also almost five centuries of common history, culture and religion. They even share part of the same genetic pool. In Mexico as in most of the countries colonized by Spain a new race emerged, the '*mestiza*', i. e. a mixture of Spanish and Indian descendents. The ties of both cultures have not been broken since the Spaniards first set foot in Mexico in 1519. But in spite of the extensive cross-cultural research carried out in many other countries over the last few years (especially on cultural differences in the amount of touching, eye contact, body orientation, physical distance and other non-verbal behavior), (see review Wolfgang, 1979; Brisling, 1983), to the best of our knowledge, no cross-cultural study has been published comparing the non-verbal behavior of both countries. This means we still know little of their respective psychological behavior.

As Jennings (1906) indicated, "in studying the behavior of any organism the first requisite to an understanding is the working out of the action system", i.e. what Makking (1936) later termed the 'ethogram'. Therefore, before searching for principles to explain behavior, we had to make an objective description of the specific behavioral items, i. e. take a look at the behavior instead of looking for the behavior. We think that the most important skill for an ethologist is to drift with the stream of behavior rather than to struggle against it.

Thus, this paper is limited to a documentation of the nature of the social interaction of children during their spontaneous social interactions at a playground. It focuses upon non-verbal behavior in an essentially naturalistic, unobtrusive manner. We analyzed how children interacted with one

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another. An attempt was made to explain cross-cultural similarities and differences in Spanish and Mexican children of similar age and social background, living in an urban environment. This material is going to be analyzed with respect to the following: a) the relative frequency or certain behavioral patterns, b) their changes in frequency during the course of the week, and c) the direction of their social interactions.

In another paper to be published, we will include more information regarding the quality of the interaction, the correlation between the different social behavior as well as the ways it may be influenced by the patterns of child rearing, family life-style, home environment and other social background. This material has been collected by means of tests, questionnaires and interviews with the children, their mothers and their teachers.

METHODS

Subjects:

The children studied were between six and seven years of age. They were in the first grade of a regular public school and they belonged to the lower-middle class. The Spanish group consisted of 34 normal children (17 boys and 17 girls) living in the suburbs of Madrid. The Mexican group was comprised of 30 children (15 boys and 15 girls) living in the outskirts of Mexico City.

Data collection and analysis:

An individual-focal sampling methods (Altman, 1974) was chosen to collect the data. A coding system was used and a repertoire of 47 specific discrete units of behavior (Table I) was selected as a checklist (see Ramirez and Mendoza, 1984). These behavioral units were grouped under six headings: cohesive, aggressive, semi-aggressive, flight, neutral and ambivalent. The definitions of most of these behavioral units have already been reported elsewhere (McGrew, 1972; Blurton-Jones, 1972). They were coded according to a previously defined procedure system. Using this technique, we recorded the subject and the object of each interaction, as well as their sex. At the inception of the project, two arbitrary decisions were made: 1) to use a unit of analysis of one minute, and 2) to consider a minimum sampling of 30 minutes of observation recording for each subject. This was used as a baseline to estimate the incidence of each behavioral unit. A total of 1,820 minutes (32 hours) of social interaction was recorded. Observation of the different subjects was done at random. For an easier identification, each subject was assigned a fixed number that was marked on a card attached to the front and back of the child. The data were statistically assessed by calculating and comparing percentages.

TABLE I
LIST OF BEHAVIORAL ITEMS GROUPED UNDER DIFFERENT HEADING

NEUTRAL	AMBIVALENT	AGGRESSIVE
Approach	Yawn	Restrain
Move away	Rock	Pinch
Verbalize	Touch	Take object
Vocalize	Thumb suck	Slap
Walk	Object suck	Push
Jump	Rough and tumble	Step on
Run	Chew lips	Hit
Ingest		Kick

		Fight/wrestle
COHESIVE	SEMI-AGGRESSIVE	FLIGHT
Smile	Point at	Crouch
Laugh	Wrinkle forehead	Walk backward
Walking arm in arm	Tongue show	Flee
Embrace	Aggressive gesture	Pout
Pat Interfere	Cry	
Give object	Intended hit	
	Chase	

Observers:

To minimize observer variation the same persons collected data in Mexico and in Spain. Each observer was equipped with a recording keyboard and audiophones that had a chronometrical device for timing the one-minute observation sampling unit. There was no feedback from the observers during the few contacts initiated by children towards them. The first days of observation were simply spent learning to observe and records the children's behavior. The purpose of this was not only to allow the observers to set some practice, but also to habituate the children to the observers' presence. After a short exposure to the observers, the children showed no reaction to them and therefore, the observers' presence did not appear to subsequently influence the children's behavior. When an inter-observer agreement greater than 75 % was reached we began to record the data. It is important to emphasize that several different behaviors could have been observed simultaneously or within the minute-unit of observation.

RESULTS

The significant differences in the frequencies of groups of behaviors are shown in Table I and in Fig. 1. Cohesive and ambivalent behaviors occurred more often in Mexican children, while aggression was higher in the Spanish children (both were significant at $p < 0.001$). There was no significant difference between the samples in terms of neutral behaviors. Flight was practically nonexistent, especially in the Spanish group.

In both samples children interacted more with partners of their own sex ($p < 0.001$) in most of the behaviors studied (Fig. 2). There were, however, two exceptions in which the frequency of the behavioral interactions between the same and different sex did not change significantly: cohesive behavior in Spaniards (5.75 % between children of the same sex and 5.70 0/0 between those of different sex) and aggressive behavior in Mexicans (9.68 % and 8.60 %, respectively). A similar distribution of ambivalent and cohesive behaviors was observed among the boys, among the girls, in the total number of observations and even in their distribution throughout the week for both of the samples (Fig. 3).

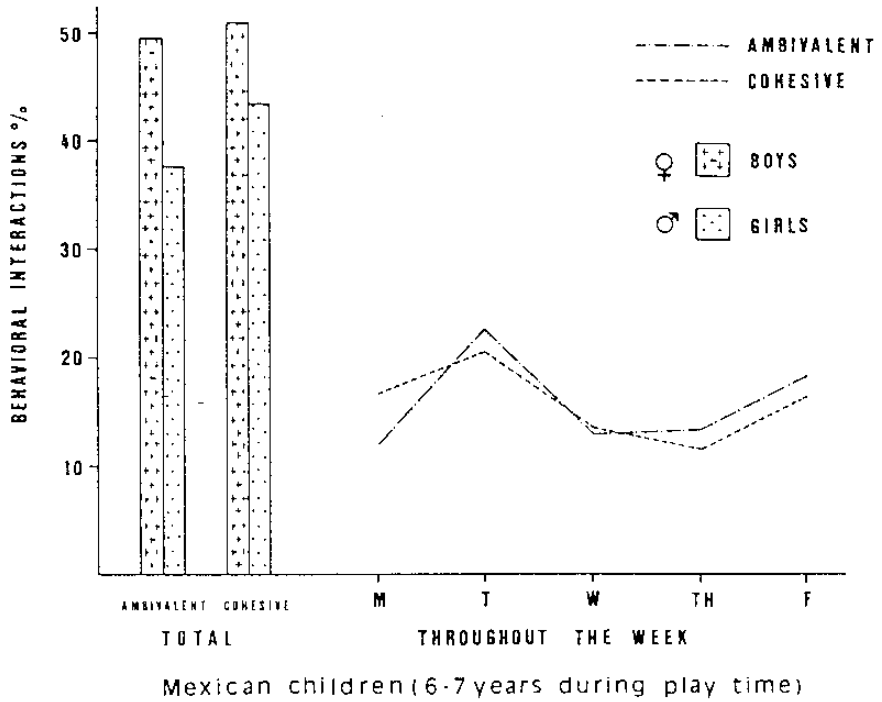

Fig. 3. Frequency of ambivalent and cohesive behaviors in Mexican children and their distribution throughout the week.

DISCUSSION

Some of the behavioral characteristics analyzed here proved to be very similar in both cultures. Children interacted more often with members of their own sex. This is in agreement with widely reported studies done in a variety of cultural settings (Harret, 1979; Attili, Cavallo-Boggi in this book). This tendency may explain why the few flight items observed were bet~veen children of the same sex and practically nonexistent between boys and girls. As expected, and confirming earlier studies (Freedman, 1978), boys were more active than girls and showed higher scores in hostile behaviors. This last difference was less pronounced. and not statistically significant, among the Mexicans. This is in some ways consistent with Holtzman's (1982) findings. After giving a personality questionnaire, similar scores of aggressiveness were obtained among Mexican teenage boys and girls. In addition, the results of the present study also show that cohesive and ambivalent behaviors were observed in the same proportion in all the samples observed (in Spanish and Mexicans, and in boys and girls) and through the week giving strong support to the hypothesis that some of the behavioral items considered originally as "ambivalent", should be reclassified and included within the cohesive group.

Other characteristics showed significant differences between the groups. Such differences do not mean the presence or absence of behavior features in one or another culture, but are rather a matter of emphasis in overlapping characters. Spanish children were more aggressive and Mexicans were more cohesive. Let us try to interpret the specific meaning of these differences, being mindful of the inherent difficulties in making cross-cultural comparisons (Bochner, 1980). The interpretation of data from two cultures is even more difficult than the interpretation of data from many cultures, as in this last case the

classic tendency to inferring individual differences from ecological correlations has to be overcome (Brown and Sechrest, 1980; Brislin, 1983).

Mexican children were more cohesive than Spaniards. They were Frequently observed smiling, walking arm-in-arm, touching one another, exchanging objects, and sharing food. Thus, Mexicans seem to be more socially oriented and express their friendship in a more overt way. This is consistent with verbal expressions very often used in Mexico and very seldom in Spain. In talking with friends, Mexicans call each other brother '*mano*', '*manito*'), or even godfather '*compadre*') to express close friendship or companionship. They are prone to choose socially desirable goals and value work or occupations in which they can help other people highly (Holtzman, 1982). This tendency toward socialization and interdependence might be related to a greater respect for elderly people and in general a caring attitude towards others, and it may also explain why in our analysis Mexicans appear to be less aggressive. This tendency is a major feature of Mexican culture and might be a direct inheritance from the native Indians. They tend to be relaxed, quiet, introverted, respectful and submissive.., even today, one may still see these attitudes when visiting one of their villages. They move about slowly; they do not shout at each other; adults do not scream at their children; if a child makes a mistake, the mistake is explained and if repeated, the child's ears are pulled (Nobelo, 1984). In summary, Indians are hospitable, friendly, sociable and mild-mannered.

In contrast, Spanish children were less cooperative with each other and acted in a more aggressive manner with their peers. They tended to behave abruptly and to be more concerned about themselves than about others. These observations support many earlier reports on the Spanish people. Many years ago Madariaga (1928) observed that the predominant characteristic of Spaniards was individualism, the antithesis of gregariousness. They tend to be hostile to associations, cohesion, and social order. It may also explain why, in contrast with the United States of NorthAmerica, the old Spanish Colonies might be also called the 'Disunited' States of SouthAmerica. You may have also read that Spaniards are an iron race, stubborn, rebellious, and violent. Prescott (1843, p. 133), for instance, described them as having "stern visages and iron forms". Fisher (1938, p. 628), saw them as 'obstinate thing' and 'mulish'. Also Rowse reported that Isabella, Queen of Spain, was 'obstinate as a Spanish mule' (*Observer*. March 15th, 1942). Madariaga, (1969, p. 160) also indicated that Spaniards are "too rebelious and impatient for submission to discipline". In English the term 'Spanish' 'is associated not only with the positive attributes of noblesse and dignity but also with the negative one of cruelty. One is not surprised, then, that a handfull of less than 400 'fierny *Conquistadores*' with these characteristics were able to over throw the powerful Aztec empire.

Finally, it should be pointed out that, although the existence of strikingly significant similarities and differences obtained in this analysis when comparing these two groups of Spanish and Mexican children, other interpretations of our result are possible. Therefore we would not want to draw premature conclusions, especially given than in any small scale study as the present, local conditions might be more important than national ones (Hinde, personal communication, 1984). Nevertheless, we hope that this kind of ethological approach will be helpful in observing and classifying behavior and in developing a system for describing it. It may provide a beginning in the understanding of some inter-individual and cross-cultural relationships.

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26

Direct and Indirect Aggression in Women: A Comparison between South African and Spanish University Students*

By

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ABSTRACT

The present comparative study examined direct and indirect aggression reported by South African and Spanish female university students. Following recent trends in the study of female aggression, this investigation included only female participants, in order to avoid the construction of female aggression as a counterpart of male aggression and the construct of "femaleness" as a homogenous category. Spanish participants reported higher overall levels of aggression with also a greater difference between direct and indirect aggression than the South African participants. The results are discussed from a socio-political stance, with consideration of women's position in dominant social discourse about aggression. As part of a collaborative project on attitudes and beliefs about aggression in Spanish and South African populations, this study provided the prospect of an enhanced cross-cultural understanding of aggression, as well as the potential for a clearer account of aggression in the South African context.

INTRODUCTION

South Africa is a country marked by violence that pervades both political and interpersonal institutions. In a report on national crime statistics produced by the South African Police Services, the national number of violent crimes increased by over 300,000 cases between 1994 and 1999, and nearly 160,000 of these crimes occurred between 1998 and 1999 alone. In the case of robbery with aggravated assault, the increase is at least four times more than the normal population growth-linked increase rate (The crime situation at national, provincial, area and station level, 2000). We still carry the scars of an oppressive Apartheid system and face new wounds dealt by destructive social structures, criminal acts of strangers, and violence from those closest to us. The terrible clarity of this picture is

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further shown in the reports of violence and aggression pertaining to women (Crime Information Management Centre, 1999). The focus of these reports is on women as victims of violence rather than as aggressors. The issue obscured by lack of scrutiny is expressions of aggression by women.

The scant attention to female aggression is typical not only of South African studies but is reflected internationally where research on aggression has traditionally reflected a male bias (Björkqvist & Niemelä, 1992). Apart from the predominance of male researchers conducting these studies, this bias can be attributed to an understanding of aggression that narrows the focus to physical action. Such a focus leads to biased assumptions about gender that maintain particular notions, including an acceptance of the idea that it is "natural" for men to be aggressive while women are viewed as gentle care-givers and complacent nurturers (Archer & McDaniel, 1995; Björkqvist & Niemelä, 1992). This bias reinforces the idea that women are not aggressive. By disregarding the existence of aggressive acts by women, women's position as "victims" is compounded, as women's power to aggress, to defend themselves, or to react to anger, frustration, or abuse remains unacknowledged (White and Kowalski, 1994). Thus knowledgeable researchers refer to "the myth of the non-aggressive female" (Björkqvist & Niemelä, 1992; White & Kowalski, 1994). Developments that have contributed to the refutation of this 'myth' include a focus on female aggression in itself (i.e. not opposed or compared to male aggression) and an enlightened understanding of aggression that allows for expressions of aggression in forms other than physical action.

Recent research reviving the distinction between direct and indirect aggression, which was first introduced by Buss (1961), recognizes the multidimensional nature of aggression. Definitions of indirect aggression vary slightly among researchers (Björkqvist, 1994) but the present study will define indirect aggression with reference to situations in which the target is attacked, not directly, but circuitously, and the aggressor might thereby remain unidentified and avoid counterattack (Lagerspetz, Björkqvist, & Peltonen, 1988). Indirect aggression is particularly relevant to the study of female aggression, since women employ indirect aggression more than direct aggression (Björkqvist, Lagerspetz & Kaukiainen, 1992; Campbell, 1999; Österman, Björkqvist, Lagerspetz, Kaukiainen, Landau, Fraczek & Caprara, 1998; Richardson & Green, 1999; White & Kowalski, 1994).

The literature on this subject sharpens the focus on the role of cultural norms and societal values in the expression of aggression (Archer & Gartner, 1984; Campbell, 1999). Female aggression is judged more harshly by society than male aggression, as it reflects a greater departure from existing social norms. Female aggression is therefore restricted primarily to the home and to more indirect modes of expression (White & Kowalski, 1994). Culture, defined as "the collective programming of the mind which distinguishes the members of one group or category of people from another" (Hofstede, 1996, p.1), is an organising mechanism by which behavior is structured to adhere to group values. This coincides with Lagerspetz & Björkqvist (1994) and Campbell's (1999) notions that indirect aggression has always been the strategy of oppressed groups in a society. A further explanation, offered by White and Kowalski (1994) illustrates how the lack of recognition of the power that women hold will lead to a suppression of their expression of aggression.

Since neither the power, nor the expression of aggression is validated, such behavior is constructed as socially inappropriate.

A comprehensive investigation thus calls for a contextual account of female aggression. A focus on sociocultural scripts for the expression or suppression of aggression highlights the influence of patriarchy. Although this is the case for both South Africa and Spain (Campbell, 1999), patriarchy compounded by authoritarianism in South Africa accentuates the effects (Lemmer, 1989). Spiegel (in Glanz & Spiegel, 1996) claims that there is an "explicit recognition that political and structural violence were part of the deep shadow cast by Apartheid" (p. 3). Within this shadow, lies the legacy of a culturally, socially, and politically defined script for the expression of aggression. Lurking beneath this culture of violence lay a power hierarchy that served to maintain dominance over the disempowered. A dominant theme inscribed in this text is that of a patriarchal and authoritarian system in which gender and race were seen as valid categories for the distribution of power. Several researchers have noted that South African society has been powerfully shaped by the notion that authority and control naturally reside in men. (Cronje & Venter, 1973; Duckitt, 1983; Glanz & Spiegel, 1996; Lemmer, 1989). As a result, women are positioned as a 'cared for' gender that is not expected to have the need to express aggression. Female aggression is thus stigmatized under a patriarchal regime (Campbell, 1999).

Although culture seems to be a longitudinally stable form of social teaching and guidance, social norms do change and, with them, the cultural appropriateness of various forms of aggressive behavior may change as well (Ruback & Weiner, 1995). This possibility of change in political and social environments is pertinent to the investigation of aggressive behavior in South African women due to the recent swing in both the political power structure and related social norms. As a part of the same patriarchal system of conservation of position, the position held by women was rarely challenged until, by the elimination of the apartheid system, women have been able to question the appropriateness of the historically oppressive system and assert their own voice (Glanz & Spiegel, 1996; Hirschmann, 1998). Although the system has now changed and the empowerment of the previously silenced begins, the transformation is not complete. This creates a lull in confident social and political expression by South African women.

The focus of this preliminary study on female aggression, comparing South African and Spanish populations, is to gain an enhanced understanding of the way culture shapes aggression and to provide an account of female aggression in the South African context. Our approach is consistent with findings by Fujihara et al. (1999), Hines and Fry (1994) and Österman et al. (1998) who concluded that cultural perspectives illustrated facets of female aggression, particularly indirect aggression. Being part of a collaborative project investigating aggression in Spanish populations grants the opportunity to focus this cultural exploration. Fujihara, et al (1999) emphasize the potential of cross-cultural research to enhance clarity in understandings of aggression, "Although the influence of the psychosocial environment on behavior cannot be disentangled from the biological one, cross-cultural studies, with their eventual similarities and differences, can help us to understand which bio-social processes are involved in aggressive behavior" (p.3).

Although patriarchal influences exist in both Spain and South Africa (Ramirez, Andreu & Fujihara, 2001), they are likely to be particularly strong in the recent cultural context in South Africa. Gilmore (1990), for example, points out that these patriarchal influences do not generally pervade all regions of Spanish society and argues further that the domestic sphere is a domain where Spanish women are the possessors of power and control. Given this opportunity for recognition of their power on at least the domestic front, the expression of aggression gains a field in which it can be validated and thus at least considered in a wider social context. In contrast, Cronje and Venter (1973), Duckitt (1983) and Lemmer (1989) argue that the patriarchal structure is so rigid within South African society that its influence is felt even within the domestic arena. Campbell (in Glanz & Spiegel, 1996) also notes this imbeddedness of patriarchy in South African society. In sum, we expected that the cultural contexts in which they live and operate would lead Spanish women to report engaging in more aggression than South African women.

Method

Participants

Data were obtained from 318 female undergraduates from Spain (n=174) and South Africa (n=144). All were university students with ages ranging from 18-22 years. Given the typical multicultural South African society, only students of European origin were selected to minimize any ethnic differences between Spanish and South African samples. The South African sample included Afrikaans- and English-speaking students and represented all regions of the country.

Measure

The present study employed the Richardson Conflict Response Questionnaire (RCRQ, Green, Richardson & Lago, 1996), a self-report measure of direct and indirect aggression (see Appendix). Respondents indicated on scales from 1 (never) to 5 (very often) how frequently in the past months they had engaged in the proposed behaviors when angry. Ten items of the RCRQ measure some form of direct aggression, e.g. " threw something at them" or "kicked them", while eight items of the RCRQ serve as filler items. Ten additional items on the RCRQ measure some form of indirect aggression, e.g. "spread rumors" or " gossiped behind their back". Richardson and Green (1999) provide evidence of the validity of the RCRQ.

Results

Direct and indirect aggression scores were calculated by adding responses to the items from each scale. A one-way ANOVA was performed to compare the means for females in South Africa and in Spain on direct and indirect aggression scores. The results indicated a statistically significantly but small difference between the females in Spain and South Africa on direct aggression, F (1, 316) = 3.96, $p < .05$, with females in Spain (M = 15.87) expressing more direct aggression than females in South Africa (M =14.79). A statistically significant difference was also found between indirect aggression scores of the two groups, F (1, 316) = 31.75, p = .001, with females in Spain (M = 19.98) expressing more indirect aggression than females in South Africa (M = 16.56).

To compare the means on individual items of the RCRQ, MANOVAS were performed for the sets of items measuring direct and indirect aggression. If the multivariate statistic (Wilks' Lambda) was significant, pairwise comparisons were done to identify statistically significant differences for individual items. Bonferroni confidence

intervals for mean differences were compiled to control the family-wise error rate for multiple comparisons.

The results for items measuring direct aggression indicated a significant difference between Spanish and South African scores, F (10, 307) = 7.28, p = .001. Pairwise comparisons revealed significant differences on "yelled or screamed at them" (p = .001); "insulted them or called them names to their face" (p = .001) and "kicked (or tried to kick) the other person" (p = .036), with females in Spain expressing more direct aggression than females in South Africa on all three items (see Table I).

Table I: Summary of Pairwise Comparison for Individual Items on Direct and Indirect Aggression

Item	Mean Diffs	Bonferroni Intervals
Direct		
Yelled or screamed at them	***.675***	.457 .892
Threatened to hit or throw something at them	.115	-.269 .038
Cursed at them	.183	-.428 .062
Threw something at them	.012	-.112 .137
Hit (or tried to hit) them with something hard	.111	-.273 .496
Insulted them or called them names to their face	***.382***	.161 .604
Kicked (or tried to kick) the other person	***.114***	.076 .221
Hit (or tried to hit) the other person with hand or fist	.053	-.079 .186
Pushed, grabbed or shoved them	.041	-.184 .101
Threw something (but not at the other) or smashed something	.067	-.125 .260
Indirect		
Made up stories to get them in trouble	***.338***	.168 .507
Made negative comments about their appearance to someone else	.099	-.127 .324
Spread rumors about them	***1.209***	1.012 1.406
Took something that belonged to them	***.138***	.024 .253
Gossiped about them behind their back	***.659***	.431 .887
Called them names behind their back	***.601***	.372 .831
Told others not to associate with them	.021	-.123 .165
Told others about the matter	.012	-.245 .221
Destroyed or damaged something belonging to them	.056	-.053 .165
Gathered other friends to my side	***.318***	.083 .554

Note: significant differences are noted with ***bold italics***

The results for items measuring indirect aggression also indicated a significant difference between groups, F (10, 307) = 22.52, p = .001. Pairwise comparisons showed significant differences on "made up stories to get them into trouble" (p = .001); "spread rumors about them" (p = .001);

"gossiped about them behind their back" (p = .001); "called them names behind their back" (p = .001); "gathered other friends to my side" (p = .008), and "took something that belonged to them" (p < .01), with females in Spain expressing more indirect aggression than females in South Africa on all the mentioned items. (See Table I).

A factorial ANOVA was also performed with culture (Spain/South Africa) and type of aggression (direct/indirect) as factors. There were significant main effects for both culture, F (1, 632) = 30.60, p = .001, and type of aggression, F (1, 632) = 52.15, p = .001. Overall, females in Spain (M = 17.93) expressed significantly more aggression than females in South Africa (M = 15.67). The females as a total group expressed significantly more indirect aggression (M = 18.27) than direct aggression (M = 15.33). There was also a significant interaction effect, F (1, 632) = 8.34, p = .004, with a greater difference between direct and indirect aggression for females in Spain than for females in South Africa.

Discussion

The results suggest significant differences related to social-cultural influences, which correspond with the notion that cultural perspectives help us to more fully understand female aggression. The significant differences between the Spanish and the South African populations can be explained in two ways: first, the strength of the patriarchal and authoritarian system in an historical South African setting suggested lower overall levels of expression of aggression by South African women; second, the transformation in the social and political conditions that have had a pervasive effect on the power dynamics within all areas of South African society would be expected to explain at least some of the differences in the expression of aggression between the two countries.

Firstly, the patriarchal nature of South African social and familial structures places women in a position of submission, thus silencing an acknowledgement of their power. Without this acknowledgement their expression of aggression becomes subdued, as it is perceived as unfitting or misplaced.

Secondly, the pertinence of the issue regarding changes in socio-political environments becomes clear in view of the results. A possible explanation for the significantly lower expressions of aggression by the South African respondents, could be that South African women remain suspended between oppressive or silencing patriarchal and authoritarian prescriptions and a potential awareness of more liberating, powerful options. Adolescent South African women thus find themselves in a position fraught with ambivalence: on the one hand they still struggle with the remnants of a culture of oppression (Glanz & Spiegel, 1996); on the other hand,

liberation is propagated and empowerment is actively pursued. (Pereira, 1999). This ambivalence could induce a state of paralysis in terms of expressions of aggression, offering an account for the lull in female aggression in the South African population.

The significant results pertaining to direct aggression (see Table I) in particular indicate that South African female students are less vocally expressive of aggression (e.g. "yelled or screamed at them") than their Spanish counterparts. Ramirez (1993) showed how emotionality seemed to be a predominant consideration in the Spanish population's expression of aggression. This coincides with the Spanish stereotype of "being emotional", "socially open" and "vocal". This emotionality indicates the social sanctioning of expression of powerful feelings such as anger and frustration in Spanish female university students.

With regard to the expression of indirect aggression, South African women predominantly scored significantly lower than the Spanish students (see Table I). This can be understood in light of the gendered power imbalances within South African society. As indirect aggression implies the capability to manipulate social relations and the possibility of actively intervening and reconstructing interpersonal structures, the restricted position held by South African women subjugates their capacity to freely manipulate their environment. In terms of Hofstede's masculinity dimension according to which, "Masculinity stands for a society in which men are supposed to be assertive, tough and focused on material success, and women are supposed to be more modest, tender and concerned with the quality of life" (Hofstede, 1996, p. 1) South Africa ranks higher than Spain. Consistent with previous research (Glanz & Spiegel, 1996; Lemmer, 1989), this study implies that due to the nature of social construction in South Africa, in contrast to that of Spain, the acceptability of women behaving in a way that may be construed as masculine, as in the expression of aggressive qualities, is less tolerable.

On the whole, women expressed more indirect than direct aggression. This is in line with research suggesting that women predominantly employ strategies of indirect aggression (Björkqvist, Österman & Kaukiainen, 1992; Österman et al., 1998). Again the disapprobation of women's expressions of aggression provides a probable account for this phenomenon: as indirect expressions of aggression are conveyed circuitously, thus obscuring the identity of the aggressor, women are able to circumvent restrictive societal norms (Richardson & Green, 1999). The greater difference between direct and indirect aggression for Spanish than for the South African females supports the notion that strong patriarchal and authoritarian prescriptions in South Africa discourage

all forms of aggression and that Spanish females are less inhibited about expressing indirect aggression.

Conclusion

This study has shed light on the role of social-cultural influences in the study of female aggression by clarifying the dissonance between social and political changes and the corporeal positions assumed by women in their choice of aggressive strategies. It also highlighted the complexity of the social and political context in which these influences are played out. It has thus sensitized the investigators to the restrictions posed by abstractions about social, cultural, and political influences. The intricacies of these factors could have been illuminated by substantiating, contextual data from the respondents themselves. Further investigations might attempt to enhance understanding of the particular cultural contexts by the complementary use of ethnographic interviews. Owens, Shute, and Slee's (2000) rigorous qualitative exploration of indirect aggression in Australian girls is an example of how quantitative data can be enriched by qualitative strategies.

The use of the Richardson Conflict Response Questionnaire may have resulted in responses lacking in reliability due to the nature of the self-reports. This discrepancy in reliability is suggested by the possibility that self-reports may complicate the issue of honest responses (Österman, et al. 1998). In our application of the RCRQ the gender of the target was not specified. Since the gender of the target influences the aggressive strategy executed by the aggressor, Richardson and Green (1999) recommend the explicit distinction between same-gender and opposite-gender targets in instructions for the completion of the questionnaire.

Furthermore, it should be noted that the results presented involved a specific subsection of Western populations, and cannot lay claim to generalizability. At present, the investigators are conducting a study that also include other subcultures in South Africa (Xhosa and Zulu populations) to gain a more comprehensive perspective on sociocultural variables that influence expression of female aggression.

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Appendix

RCRQ

1. Yelled or screamed at them
2. Did things to irritate them
3. Threatened to hit or throw something at them
4. Made up stories to get them in trouble
5. Did not show that I was angry
6. Cursed at them
7. Threw something at them
8. Tried to make them look stupid
9. Stormed out of the room
10. Made negative comments about their appearance to someone else
11. Hit (or tried to hit) them with something hard
12. Insulted them or called them names to their face
13. Talked the matter over

14. Spread rumors about them
15. Sulked and refused to talk about it
16. Kicked (or tried to kick) the other person
17. Dropped the matter entirely
18. Took something that belonged to them
19. Hit (or tried to hit) the other person with my hand or fist
20. Gossiped about them behind their back
21. Pushed, grabbed or shoved them
22. Called them names behind their back
23. Told others not to associate with them
24. Waited until I calmed down and then discussed the problem
25. Told others about the matter
26. Threw something (but not at the other) or smashed something
27. Destroyed or damaged something that belonged to them
28. Gathered other friends to my side

Scoring:

direct items:	ag1	ag3	ag6	ag7	ag11	ag12	ag16	ag19	ag21	ag26
indirect items:	ag4	ag10	ag14	ag18	ag20	ag22	ag23	ag25	ag27	ag28
filler items:	f2	f5	f8	f9	f13	f15	f17	f24		

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CULTURAL AND SEX DIFFERENCES IN AGGRESSION: A COMPARISON BETWEEN JAPANESE AND SPANISH STUDENTS USING TWO *DIFFERENT INVENTORIES*[*]

J. Martin RAMIREZ, J. Manuel ANDREU, & Takehiro FUJIHARA,

ABSTRACT

Two self-report inventories developed to assess different dimensions of aggression, the Aggression Questionnaire (Buss and Perri, 1992) and the EXPAGG (Campbell, Muncer, and Coyle 1992) were administered to a sample (N =400) of men and women undergraduates in two Japanese and Spanish universities. The factor structure of scales were assessed using confirmatory factor analysis: both questionnaires showed high correlations between their respective scales, following the same trend as in previous studies using samples of British and American students. Respect to cultural differences Japanese students reported more physical aggression than Spaniards while these ones reported more verbal aggression, hostility, anger and more expressive representation of aggression than did Japanese students. Respect to the sex differences, in both cultures, males reported more physical aggression, verbal aggression and hostility, while females reported more expressive representation than males.

INTRODUCTION

Aggressive behavior has been found to show greater variance across cultures than between sexes: Rohner (1976) surveyed 130 countries investigating aggressive behavior in

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101 societies, finding that, although there was evidence of cross-culturally valid sex differences related to aggression, culture was more predictive of level of aggression than sex. However, Rohner did not record means of aggression, but only dichotomous levels such as high or low. Burbank (1987) made a cross-cultural survey of female aggression in 137 societies, focusing on physical and verbal means of aggression. She recorded a wide rage of aggressive strategies used by women, showing a great culture-linked variation in pattern of aggression.

Cultures form their own sets of values to which individuals are exposed. Norms for aggression have been found to vary considerably among cultures. Fraczek (1985) found that Finns and Poles differed in their moral approval of certain types of aggression. However, applying the same kind of questionnaire to students from four different Spanish regions, and comparing the results to the answers given in the same Finn and Pole samples, Ramirez (1991, 1993) studied moral justification, reporting only minor differences, with very similar degrees of acceptance of interpersonal aggression among these different European samples, suggesting a sharing of similar standards of approval.

From an anthropological perspective Fry (1998) has suggested an intercultural variation in aggression from non-aggressive to highly violent societies, although, as Silverman and Gray (1994) suggested, rather than polarizing societies as either violent or nonviolent types, perhaps it is more realistic to view societies as scalable along a continuum ranging from violent to peaceful.

Sex differences in aggression have been established in a variety of cultures using diverse methods and age groups. Even in the already mentioned studies on moral justification of aggression, although the global degree of acceptance was also similar for men and women, there was some evidence of gender differences in some combinations of aggressive acts and justifying-situations (Fraczek, Ramirez and Torchalska, 1985; Ramirez, 1990, 1993). Numerous studies from an evolutionary psychology perspective (Daly and Wilson, 1988, 1998, Wilson and Daly, 1993; Archer, Kilpatrick and Bramwell, 1995; Archer 1998) support the hypothesis that sex differences in aggression were larger for more escalated forms of aggression, and were located in the degree of escalation in the actions that follow anger rather than in the frequency with which people become angry. This view derived from modern reformulations of Darwin's theory of sexual selection (Trivers, 1972), which predicts greater competitiveness and risk taking among males than females.

Following Archer, Holloway and McLouglin's suggestion (1995) that further research is required to assess the extent to which the scales are applicable to samples of different

ages, and from different subcultures and societies, the present study was designed to explore the magnitude and direction of the relations between sex and cultural differences in different kinds of aggression, and to obtain more cross-cultural evidence of the eventually universal hypothesis that sex differences in aggression are larger for more escalated forms of aggression.

To address these issues two different self-reported aggression inventories, developed in the Anglo-Saxon culture, were applied to Spanish and Japanese populations. Firstly, the AQ (Buss and Perry, 1992), based on an earlier widely used measure of aggression (Buss and Durkee, 1957), useful for examining the association of aggression with other variables, both biological and psychosocial. Secondly, the EXPAGG, a self-report inventory developed by Campbell, Muncer and Coyle (1992), to assess masculinity and femininity as different dimensions, defined primarily as instrumentality and as expressiveness respectively according to the two-dimensional approach dominant for the past twenty years among psychology theorists. Since both scales are already used widely, we examined both of them with the same samples to assess their interrelation and comparability.

METHOD

Subjects

Four hundred undergraduate students of Psychology participated in the study. Half were Japanese (100 males with a mean age of 21 yrs. and a standard deviation of 1.34 yrs, and 100 females with a mean age of 20 yrs and a standard deviation of 0.75 yrs) and half were Spanish (64 males with a mean age 'of 19.7 yrs and a standard deviation of 2.42 yrs, and 136 females with a mean age of 1 8.4 yrs a standard deviation of 0.93 yrs). They were enrolled in psychology courses at a university in a large urban area (Kwansei Gakuin University, near Kobe, and Complutense University in Madrid).

Questionnaires

Each participant filled in two questionnaires in a counter-balanced order: the Aggression Questionnaire and the EXPAGG questionnaire.

9. The Aggression Questionnaire (AQ), devised by Buss and Perry (1992), consisted of 29 items concerning self-reported behavior and feelings. Each item was scored using a5 point scale (1: "very often applies to me" to *5:* "never or hardly

applies to me"). There were four subscales: physical aggression (9 items, alpha coefficient = . 85), verbal aggression (5 items, alpha coefficient =.72), anger (7 items, alpha coefficient =.83), and hostility (8 items, alpha coefficient = .77).
10. The EXPAGG Questionnaire, developed by Campbell, Muncer and Coyle (1992), consisted of 20 items measuring expressive and instrumental representations of aggression. The questionnaire was scored by assigning a value of 0 to instrumental responses and 1 to expressive responses, thus a high score indicates a predominantly expressive mode of responding (20 items, alpha coefficient =.72),

RESULTS

Psychometric Analysis of the Aggression Questionnaire

Factor analysis was used to assess the factorial structure of the AQ in the Japanese and Spanish samples. Table I shows the results of factor loading after Varimax rotation, with a factorial structure with four factors interpreted as physical aggression, verbal aggression, anger and hostility. The amount of variance for each factor is also displayed.

Items with commonly higher factor loading between Japan and Spain were selected and the internal consistency of the four factors was evaluated by the alpha coefficient using all 400 subjects (Table 2). The alphas were as follows: for Physical Aggression (6 items) .81, for Verbal Aggression (4 items) .64, for Anger (4 items) .72 and for Hostility (3 items) .52.

Table 1. Factor analysis for Japanese and Spanish samples.

	.TAPA.N					SPAIN			
item	**Physical**	**Verbal**	**Anger**	**Hostility**	**Item**	**Physical**	**Verbal**	**Anger**	**Hostility**
Physical					Physical				
	0.60	**-0.07**	**0.25**	**0.12**	**1**	0.64	**-0.10**	**0.24**	**0.21**
2	**0.76**	**0.08**	**0.07**	**-0.01**	**2**	**0.83**	**0.10**	**0.02**	.4103
3	**0.73**	**0.16**	**0.02**	**-0.00**	**3**	**0.69**	**0.09**	**0.01**	**0.03**
4	**0.57**	**0.19**	**0.48**	**-0.15**	**4**	**0.10**	**0.31**	**0.03**	**0.04**
5	0.50	**0.37**	**-0.13**	**0.29**	**5**	0.75	**0.19**	**-0.02**	**-8.02**
6	**0.52**	41.20	-0.01	**0.1-4**	**6**	**0.85**	**-0.01**	**-0.01**	**0.1-3**
7	**0.28**	**-0.16**	**0.14**	**0.21**	**7**	**0.09**	**0.09**	**0.09**	**-0.15**
8	**0.37**	**-0.10**	**0.00**	**0.29**	**8**	**0.62**	**0.08**	**0.08**	**0.23**
9	8.53	**0.18**	**0.13**	**8.19**	**9**	**(1.54**	**8.21**	**0.21**	**8.23**
Verbal					**Verbal**				
1	**0.01**	**0.70**	**-0.11**	-0.12	1	**-0.03**	**0.46**	**0.03**	**-0.05**
2	**8.33**	**8.53**	41.13	41.07	2	**0.14**	**0.42**	-0.04	**0.26**
3	**0.65**	**0.25**	**0.10**	**0.01**	**3**	**0.27**	**0.44**	**0.26**	**-0.06**
4	**0.21**	**0.72**	**0.12**	**0.10**	**4**	**0.08**	**0.67**	**0.02**	0.08
5	0.24	41.59	0.33	**-0.00**	**5**	**0.14**	**0.76**	-41.93	0.14
Anger					Anger				

	1	**016**	0.04)	(1.39	**-0.14**	1	-6.01	4)27	**038**	-6.17
	2	**0.21**	Gill	**0.62**	-0.06	2	**0.09**	**0.31**	0.56	-0.21
	3	**0.41**	**0.22**	**0.55**	-0.03	3	0.14	0.28	**0.72**	**0.02**
.	4	0,40	0.24	(L36-**0.41**	**-0**'41	4	41,03	**0.39**	0.08	-0.07
		0.21	**0.32**	**0.61**	**-0.05**	**5**	**0.15**	0.48	0.17	0.05
	6	**0.22**	**-0.29**	**0.62**	0.11	6	0.25	0.30	0.52	0.19
	1	0.21	-0.08	0.56	**41.34**	**7**	**0.09**	**0.46**	0.49	**0.10**
	Hostility					Hostility				
	1	0.06	-0.08	0.44	**0.31**	**1**	**0.30**	**0.10**	**0.37**	**0.1$**
	2	-41.1$	**0.17**	**0.52**	**0.22**	**2**	**-0.05**	**-0.01**	**0.61**	0.23
	3	**-0.15**	**-0.03**	**0.65**	**0.13**	***3***	-0.39	-0.31	**0.53**	0.26
	4	**-41.17**	0.419	**11.53**	**0.49**	**4**	**-11.03**	**-0.06**	**0.50**	**0.38**
	5	(1.04)	-6.4)')	41.06	8.47	5	0.09	0.25	0.07	0.77
	6	**0.14**	**0.16**	**-0.03**	**0.51**	**6**	**(3.24**	**0.152**	**0.26**	41.20
	7	**0.24**	-8.31	**0.32**	**0.63**	**7**	**0.07**	**0.07**	**0.25**	**0.70**
	8	**0.10**	**0.01**	**-0.03**	**0.71**	**8**	**0.20**	**0.05**	**0.26**	**0.43**
	Amount of	22.00V.	6.81%	10.17%	5.71%		25.08	9.8-4"/.	7.15/.	**5.31%**

Variance

Table 2. The Japanese-Spanish version of the AQ

Physical Aggressiob
Once in a ~hiie I can't control the urge to strike another person
GMm enough pro~cation, 1 may hit another person
If somebody hits tue. I bit back ALPHA = ..81
If I have to resort to ~olence to protect my rights, I will
There are people who pushed me so far that we caine to blows
I have become so mad that I have broken things
Verbal Aggression
I tell my friends openly when I disagree with them
I often find myself disagreeing with pcopl~
I can't help getting into arguments when people disagree with me ALPHA = …64
My friends say that **I'm** somewiut arguinentativ~
Auger
When fiustnsted, I let my irritation show
I sometimes feel **like a** powder keg ready **to** e.\plode ALPHA = ..72.
sometimes 1 fiyoff the handle fur **no** good reason
I have trouble controlling my temper
Hostility
I know that friends~' talk about me behind **my** back
I sometimes feel that people are Iauhsng at me behind my back ALPHA = …52

Table 3. ANOVA for each factor scores

			MEAN	**S.D.**	**F**	***P***
	Country	Japan	**2.48**	0,75	*34,83*	,000
		Spain	2,09	0.83		
PhysicalAggression	Sex:	Male	2,65	0,80	52,82	,000
		Female	2,03	0,7'3		
	Sex x Country 10.76 .001					
	Cotmtry:	Japan	2.85	0,73	8,67	,003
		Spain	3,01	0,64		

Verbal Aggression	Sex:	Male	3,04	0,67	10,76	,00]
		Female	2,85	0.69		
	Sex x Country				2,35	•143
	Country:	Japan	2,39	0,68	18,86	,00t)
		Spain	2,51	0,89		
Hostility	Sc'c:	Male	2,41	0,91	3,98	.047
		Female	2,31	0.72		
	Sex x Country				043	. 83
	Country:	Japan	2,59	0,74	26,85	.000
		Spain	3,02	0.81		
Anger	**Sex:**	Male	2,69	0,84	2,30	,130
		Female	2,89	0,77		
	ScxxCountry				0.01	.922
	Country'	Japan	0,57	0,33	84,78	.000
		Spain	0.72	0,16		
Expressive	Sc~'	Male	0.57	0.16	39.73	.0(Y)
Rcprescntatioa		Female	0,69	0,15		
	Sex.~ CuunLr~				316	.076

Cultural and sex differences in direct aggression

A 2 x 2 (country by sex) analysis of variance (ANO VA) was conducted for each factor score (Table 3). Factor scores were computed by averaging across several items with commonly higher factor loading between Japan and Spain samples for each subject.

Regarding the ANOVA of Physical Aggression factor score: this resulted in a significant main effect of country and sex, and a significant country by sex interaction: Japanese students showed significantly more physical aggression than Spanish students did, and males showed significantly more physical aggression than females did in both populations. Japanese females showed significantly more physical aggression than did Spanish females.

Regarding the ANOVA of Verbal Aggression: significant main effects of country and sex were observed: Spanish students showed more verbal aggression than Japanese students did, and males showed significantly more verbal aggression than females in both populations.

Regarding Hostility: significant main effects of country and sex were observed: Spanish students showed significantly more hostility than did Japanese students and males showed significantly more physical aggression than females in both samples.

Finally, the ANOVA of Anger only showed a significant main effect of country: Spanish students showed significantly more anger than did Japanese students.

Psychometric Analysis 0/the EXPAGG Questionnaire

A 2 x 2 (country by sex) analysis of variance (ANOVA) was conducted for expressive scores (Table 3). The ANOVA of expressive representation of aggression showed significant main effects of country and sex: Spanish students showed significantly more expressive representation of aggression than Japanese students did, and females showed significantly less physical aggression than males.

Eta statistics and Intercorrelations between subscales

The correlations between the subscales of the AQ were all high and positive. The expressive representation of aggression showed a significant negative correlation with the physical aggression scale and positive with the anger scale (Table 4).

Table 4. Eta statistics for each factor scores

	Country		Sex
Physical Aggression	.24	<	.36
Verbal Aggression	.11.	<	13
Anger	.26.	>	12
Hostility	.19	>	.05

Finally, according to Eta statistics (Table *5)*, the sex differences for physical aggression and verbal aggression were larger than the country differences, whereas differences for anger, hostility and EXPAGG were larger between the countries than between the sexes.

Table 5. Correlations among the suhscales

	PHYSLCAL	VERBAL	**ANGER**	HOSTILITY

	AGGRESSION	AGGRESSION	
EXPAGG	~048*	-005	**01A**** **001**
PHYSICAL AGGRESSION	**0.31 ***	**~**	**0.25 ****
VERBAL AGGRESSION	0.20	**~**	**0.33***
ANGER	**0.I9**	**~**	**0.36**

~P<0.01

DISCUSION

Overall, the present findings confirm the applicability of both questionnaires to undergraduate samples outside North America and England for the study of sex and cultural differences in aggression (Andreu, Fujihara, and Ramirez, 1998).

Cultural differences

Many investigators have suggested that aggressive behavior is strongly connected with cultural and social factors. But, until now, it is not verified that what kinds of dimensions in culture may relate with aggressive behavior. These results indicated that culture has a large effect on aggression, but its influence is not uniform on all dimensions of aggression: it differs according to each dimension. The present study gives further indication of the importance of making distinctions between styles of aggression and noting on the interaction between styles of aggression and cultural differences. The AQ results indicated that Japanese students reported more physical aggression than did Spanish students, and that Spanish. Students showed more verbal aggression, hostility, and anger than did Japanese students. Regarding the EXPAGG, a higher expressive representation of aggression among Spanish students and an instrumental representation or belief of aggression among the Japanese students.

What kinds of factors have produced these differences? Hofstede (1991) has pointed out four dimensions, that is, power distance, individualism, masculinity, and uncertainty avoidance as the explanation variables of cultural differences. Focusing sex differences in behavior to gender-related self-concepts, such as the masculinity and femininity identification hypothesis, it may be speculated that the most differential dimension between Japan and Spain would be masculinity versus femininity. According to Hoftede (1991), Japan is high in masculinity score, whereas Spain is relatively low. Ramirez and Fujihara (1997), by comparing it among five different countries, suggest the possibility that the value dimension may link to aggressive behavior.

Interestingly, intra-cultural variation data by Archer, Holloway, and McLoughlin (1995) also demonstrated that there was a significant correlation between masculine value and physical aggressiveness. Collecting much data in many countries will be necessary to clarify the relationship between aggressive behavior and masculinity versus femininity dimension.

Sex differences

In both cultures, males reported more physical aggression, verbal aggression and hostility, while females reported more expressive representation than males, following the same trend as many studies have reported previously (Campbell et al.,1992; Archer, Holloway and McLoughlin, 1995; Archer, 1998).

The ANOVA of physical aggression factor score of the AQ by Buss and Peny (1992) resulted in a significant main effect of sex, indicating males show more physical aggression than females. This result agrees with previously replicated findings (Maccoby and Jackin,1974; White,1983; Hyde,1984; Eagly and Steffen,1986). Behavioral findings and criminological statistics show that physical aggression is both more frequent and more severe among males than among females, at least in Western societies. In fact, as anthropological studies have shown (Fry, 1992, 1998; Cook, 1992), this is not a universal truth and does not hold for all cultures. Perhaps, the most important result according to an evolutionary standpoint was that, whereas there was no differences between males over cultures for physical aggression, Japanese females reported more physical aggression than did Spanish females. A possible explanation of these results may be that biological factors, like testosterone, would be more important in order to regulate physical aggression in males, while cultural factors would be more important in the regulation of physical aggression in females. Further studies however are needed to assess this hypothesis.

Sex differences also were observed for another dimensions of aggression, even if they were smaller than for physical aggression. That is, males showed more verbal aggression and hostility than females. These results, especially for verbal aggression, were consistent with previous findings of Gladue (1991), of Archer, Kilpatrich, and Bramwell (1995), and of Österman, Björkqvist, Lagerspetz, Kaukiainen, Landau, Fraczek, and Caprara (1998) in a cross-cultural study with Finns, Israelis, Polish and Italians. Finally, men and women typically did not differ on measures of anger (Buss and Perry, 1992; Harris, 1996; Archer, Holloway, and)McLoughlin, 1995; Ramirez, Fujihara and Van Goozen, in press).

Sex differences on the two different aggression scales were as predicted and replicated across the two culturally different samples. Consistently with previous reports (Campbell, Muncer, and Coyle, 1992; Campbell, Muncer and Gorman, 1993; and Archer and Haigh, 1997, among others), females showed significantly higher expressive scores than males. This pattern of sex differences is understandable through evolutionary models of sexual selection and differential male-female parental investment. Symons (1979), for example, proposes that men fight more than women because men are evolutionarily adapted to compete over women more than vice versa.

Correlation among subscales

The high and positive correlations between all the subscales of the AQ, and especially between physical and verbal subscales, found in this study followed the same trend as in previous studies using samples of British and American students (Buss and Perry, 1992; Archer et at., 1995; Archer and Haigh 1997). According to Archer and Haigh (1997), the finding that instrumental beliefs about aggression were strongly associated with levels of self-reported physical aggression, measured by the AQ, and modestly associated with verbal aggression, indicate that they were measuring similar dispositions and behavior.

The finding that the expressive representation of aggression had a significant negative correlation with the physical aggression scale and a positive one with the anger scale, however, differed from Archer' s study, where anger was negatively correlated with the revised expressive scale (hut non-significantly).

In conclusion, both questionnaires showed high correlations between their respective scales. Japanese students reported more physical aggression than Spanish students while these ones showed more verbal aggression anger and more expressive representation of aggression than did Japanese students. Regarding the sex differences, in both cultures males reported more physical aggression, verbal aggression a hostility trend, while females reported more expressive representation than males. Biological as well as cultural and intrapsychic factors may help to explain these differences.

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SIMILARITIES IN ATTITUDES TOWARD INTERPERSONAL AGGRESSION IN FINLAND, POLAND, AND SPAIN

by

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29

ACCEPTABILITY OF AGGRESSION IN FOUR SPANISH REGIONS AND A COMPARISON WITH OITHER EUROPEAN COUNTRIES*

J. Martin Ramirez

ABSTRACT

The degree of acceptance of various forms of aggression in different situations was investigated by applying questionnaires to students from four Spanish regions: Castile, Catalonia, Andalusia, and the Basque Country. These data are also compared with similar studies in Finland and Poland. Although some minor differences were found between the different groups as well as some gender preferences, very similar acceptances were observed in all the populations studied, suggesting a certain universality of norms and beliefs about aggression in society.

INTRODUCTION

Aggressive behavior is regulated by moral rules. Every society has a moral code (written or unwritten) stating the degree to which different forms of aggression are acceptable under particular circumstances [Wilson. 1978; Forgas, 19801. This code regulates acts according to appropriate norms, resulting in a moral attitude or judgement concerning the degree of justification or acceptance. Some acts may be regarded as legitimate in some situations but be disapproved of in others. Social situations might call for only one kind of aggressive act or alternatively for several kinds. According to social learning theory, social and moral attitudes can facilitate or block the expression of aggression. being the main factors determining the expression of aggressive behavior in social life. When such events are favored, more people engage in aggressive interactions, more frequently, and with greater intensity, than when human hostility is disapproved IBandura. 1976; Fraczek, 19851.

In addition, these moral rules probably also influence our feelings of anger, and thus they may induce aggressive motivation. In other cases, however, the norms and subjective feelings may not correspond [Berkowitz, 1962; Fraczek, 1977; Lagerspetz and Westman, 1980]. These rules were explicitly investigated using questionnaires in Finland [Lagerspetz and Westman, 1980] and in Poland [Frazcek, 1985; Frazcek et ai., 19851. The present study was intended to extend these findings by using samples of men and women from four Spanish regions: Castile, Catalonia, Andalusia, and the Basque Country. In order to minimize the differences in variables such as age, educational background, and other

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related social variables, male and female students of similar age were used in all samples. Only subjects born and living in their own region were evaluated. This paper includes only the part related to the degree of acceptance of various forms of aggression in different situations (norms). A comparison with Polish [Frazcek, 1985; Frazcek et al., 19851 and Finnish data (Lagerspetz and Westman, 1980] is also included here [see also Ramirez, 19911. A further comparison is now being undertaken in Japan [Fujihara and Ramirez, in preparation].

This investigation examines attitudes toward interpersonal aggression, as comparative studies may contribute to our knowledge of the impact of environment on human nature [Ramirez, 1978, 1984]. The present study compares the norms regulating aggression in both sexes, and in different European communities, each with their own culture, language, and customs. It was hoped to indicate which factors were associated with particular attitudes to aggression in particular situations. Similar acceptance of aggression in different cultures would give us a far better basis of generalization than can be obtained from individuals within only one culture.

MATERIALS AND METHODS

Subjects

Data were obtained from a total of 352 subjects born and living in Spain: Castile (60 females and 60 males), Andalusia (46 females and 46 males), Catalonia (20 females and 20 males), and the Basque Country (50 females and 50 males), respectively. All were students living in urban environments, of very similar age (with a range from 18 to 21 years), and attending, respectively, the Universities of Madrid, Seville, Barcelona, and San Sebastian. The subjects were essentially typical undergraduate Spanish students.

Spanish data were compared with previous ones obtained in Finland (83 subjects) and in Poland (64 subjects): in both, students living also in urban environments were studied. The age of the Poles was very similar to the Spaniards, and the Finns on the average were a few years older.

Questionnaire

Similar versions of the Social Attitude Inventory, an elaborate rating scaling originally devised in Finnish by Lagerspetz and Westman [19801, was prepared (translated, modified to measure a wider variety of interpersonal actions, adapted for our research, and verified by Frazcek and Ramirez for the Polish and Spanish subjects, respectively. It consists of three parts: norms, feelings, and moral reasoning. Only the first part of' C.A.M.A. (Cuestionario de Actitudes Morales y Agresión) will be described here.

This first section contains eight categories of aggressive behavior (acts) of different intensities and quality: namely, hitting, killing, shouting angrily, being ironic, using torture, having a fit of rage, threatening or hindering another person from doing something.

Each category of acts is accompanied by a list of six different circumstances (situations) in which the aggressive behavior may be justified. These are in self-defense, in protecting another person, as consequence of emotional agitation, in defense of one's property, as a punishment, or as a way of overcoming communication difficulties. For some acts there were other additional specific circumstances, such as obtaining important information, in child rearing, due to jealousy or drunkenness, giving a total of 60 possible interactions. Only the six possible justifications accompanying all categories of acts were analyzed here. The task consisted of rating the acceptability of a given behavior under specified circumstances, using a two-point scale: 'inadmissible' or 'admissible'. Those latter scores, reflecting a high degree of acceptance of the kind of aggressive act, were evaluated.

Statistical Methods

The gender and regional differences for each act, the situation- and act-situation interactions were studied by using the Z-test for difference between two proportions. The rank correlations between the different categories were tested by applying two rank-sum non-parametric procedures: Kruskal-Wallis H-test and Mann-Whitney U-test. All statistical tests were conducted with a rejection criterion of $P < .05$.

RESULTS

Spanish Samples

Global level of acceptance. For the global scores the following conclusions can be drawn:

1. The overall degree of acceptance of aggression gave an average of 22.55% for the entire sample, with the following scores for each region: Andalusia = 26.3%, Basque Country = 22.6%, Catalonia = 21.4%, and Castile = 19.95%. About one-quarter of the sample, therefore, fully accepted some kind of aggression under sonic circumstances, there being no significant differences between the regions (Table I).

2. No significant gender differences were found in the overall Spanish sample, or in any region.

3. A comparison of subjects of the same sex between different regions showed a wider range of overall scores in females (from 28.85% in Andalusia to 17.65% in Castile) than in males (from 23.8% in Andalusia to 20.94% in the Basque Country) (Table II).

TABLE I. Comparison of Acceptance Percentage for the Various Acts and Situations in the different Spanish Samples'

Rank	Andalusia (N=92)	Basque C (N=l00)	**Catalonia (N=40)**	**Castile (N=120)**	**Spain (N=352)**
			Full acceptance scores for aggressive acts (total population)		
1st	**Sh>**	**lr**	**Hd**	**Sh**	**lr**
	44.40%	**37.33%**	**46.00%**	**32.20%**	**35.56%**
2nd	**lr'>**	**Sh**	**lr**	**1r<**	**Hd**
	43.40%	**34.00%**	**32.50%**	29.00%	35.51% -
3rd	**Hd**	**Hd**	**Th**	Htl'	Sb
	38.90%	29.45%	27.O0'Ai	27.70%	33.40%
4th	Ra	Ra	Sh<	Ra-	Ra
	28.75%	29.33%	23.00%	26.40%	**24.65%**
5th	**Hr**	**Th**	**Hr**	**lit**	**Th**
	22.15%	21.40%	20.00%	**18.17%**	**20.14%**
6th	**Th**	Hi	**Ra**	**Th**	**Hi**
	20.20%	20.17%	14.10%	17.40%	20.14%
7th	Ki	Ki	Ki	Kt	Kt
	7.30%	8.60%	7.50%	5.80%	7.27%
8th	To	To	To	To	To
	5.90%	1.80%	5.00%	3.20%	2.87%
			Full acceptance scores for justifying situations (total population)		
lit	**SD**	**SD**	**SD**	**SD**	**SD**
	41.06%	36.25%	32.48%	34.25%	36.01%
2nd	**AL**	**AL**	**AL**	AL...	**AL**
	36.80%	**29.88%**	**26.85%**	**27.56%**	30.27%
3rd	*DP*	**NC**	**EM**	**NC**	**NC**
	22.50%	**23.25%**	**18.75%**	**26.88%**	20.06%
4th	EM	EM	DP	E~d	EM
	19.25%	20.38%	18.73%	15.13%	18.38%
5th	NC	DP	NC	LW	OP
	16.38%	19.93%	13.75%	12.85%	58.25%
6th	**PU**	**PU**	Pu	pu	
	12.08%	7.55%	12.93%	6.35%	9.73%

tAct~: Sh shouting; **lr** being ironic; Hd = hindering; Ra = **having rage: Ht** = **hitting;** Th = threatening; Ki killing; To torturing.
Situations: SD = self-defense; Al altruism: DP defense of property; **Ent emotional agitation; NC** = communication difficulties; PU = punishment.
Signilicant higher?>) or lower (CZ) acceplatlce than an other **regions** (*P* < .05?

Acts. When scores of acceptance for the eight types of aggressive acts were compared, independently of the type of justifying circumstances, the following ranks were found:

1. As expected (Table I), 'milder' acts, such as 'being ironic' 'hindering', and 'shouting angrily' were felt by Spanish students to be the most acceptable kinds of aggressive behavior, with no significant difference between them. These were followed by three other acts: 'rage', 'threatening', and 'hitting', that were much less acceptable. The two acts found most unacceptable were 'torturing' and 'killing', both differed significantly from all other acts, and yielded similar low levels of approval.

2. Comparing the ranks and scores for the eight different acts in the four Spanish regions (Table I), 'hindering', 'being ironic', and 'shouting' were the most acceptable. There was only one exception: the Catalans expressed lower acceptance for 'shouting'; this differed significantly from the Andalusian students (44.4% vs. 23%, Z = 2.19, $P < .05$). The Andalusians also expressed significantly higher approval for 'being ironic' than Castilians (43.4 vs. 22.9%, Z = 2.31, $P < .05$). The

two lowest scores were for the same acts in all the samples: 8th, 'torturing', and 7th 'killing'. The Basque and Castilian responses were close to the Spanish average; the Andalusians and Catalans differed some what from the typical pattern. Catalans placed 'threatening' in 3rd rank instead of the 6th showed by the other populations. Another peculiarity of Catalans was their lower approval of 'rage' and 'shouting' in comparison to the other three regions.

3. No significant gender differences were found in any of the eight indices (Table II). Nevertheless, females scored higher than males in the approval of verbal aggression, such as 'shouting' and 'rage', and males higher than females in the acceptance of physical violence: 'threatening', 'hitting', 'killing', or 'torturing'.

4. No significant differences between the different regions were found for males, but there were several for females (Table II): Andalusian girls expressed a significantly higher acceptance for 'being ironic' than Catalans (51.6% vs. 22.5%, Z 2.39. $P <$ .05) and than Castilians (51.6% vs. 28.33%, Z 2.41, $P <$ .05); they were also more likely to approve 'hindering' than Castilians (44.6% vs. 25.6%, Z = 2.10, $P <$ .05).

TABLE II. Rank and Percentage for the Various Acts and SItuations In Males and Females of each Spanish Region'

	Andalusia		Basque C		Catalonia		Castile			
Rank	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*
					Full acceptance scores **for aggressive acts (gender differences)**					
1st	**Sh**	**Sh**	**lr**	**lr**	**Hd**	**Hd**	Sb	Sh	Sr	lr
	37.2	51.6	33	41.7	46	46	35	29.4	35.25	36
2nd	**Sr**	**lr'»**	**Hd**	**Sh**	**lr**	**Th**	**Hd**	**lr<**	**lid**	**Ir**
	35.8	**51**	**31.2**	**39.2**	**42.5**	**28**	**29.8**	**28.3**	**35**	**3S.9~**
3rd	**Hd**	**Hd>**	**Sb**	**Ra**	**Th**	**Sb**	**lr**	Hd<	**Sh**	**Sh**
	33.2	44.6	28.8	36.3	26	23	29.7	25.6	31	35.8
4th	**Th**	**Ra**	**Th**	**I-Id**	**Sh**	**lt'<**	**Ru**	**Ra**	**Th**	**Ra**
	23.4	34.3	22.4	**27.7**	**23**	**22.5**	**28.3**	**24.5**	**23.45**	**26.9**
5th	**Hr**	**Hi**	**Ru**	**Th**	**Hr**	**Hi**	**Th**	**Hr**	**Ru**	**'lit**
	22.8	**21.5**	**22.3**	**20.4**	**21.7**	**18.3**	**22**	**16.2**	**22.2**	**19.4**
6th	**Ra**	**Th**	**Hr**	**Hr**	**Ra**	**Ra**	**Hi**	**Th**	**Hr**	**Hr**
	22.3	17	20	IS?	55.8	12.5	20.2	12.2	21.6	18.7
7th	To	Kr	Ki	Ki	Ki	Ki	Ki	To	Kt	Ki
	8.2	7.2	10.8	6.4	8	7	10	3.4	9	5.5
8th	**Ki**	**To**	**To**	**To**	**To**	**To**	**To**	**To**	**To**	**To**
	7.4	3.6	2	1.6	I	I	3	1.6	3.35	2.4
					Full acceptance scores for justifying Situations (gender differences)					
lit	SD	SD	SD	SD	SD	SD	SD	NC>	SD	SD
	38.25	43.9	36.5	36	35.6	29.35	38.25	32.5	37.15	34.9
2nd	AL	AL>	AL	AL	AL	AL	AL	SD	AL	AL
	33.75	39.85	28.25	31.5	26.85	26.85	35.4	30.3	31	29.5
3rd	**DP**	**EM**	**OP**	**NC>**	**EM**	**OP**	**NC'»**	**AL<**	**DP**	**NC**
	24.25	**22.725**	**9.5**	**28.5**	**21.25**	**19.35**	**21.25**	**19.75**	**18.8**	**22.5**
4th	EM	NC	NC<	EM	NC	EM	EM	EM	NC	EM
	15.75	21.5	IS	25.75	20	16.25	13.5	16.75	17.6	20.4
5th	NC<	DP	EM	DI'	OP	PU	OP	DP	EM	OP
	11.25	20.75	15	18.35	18.1	12.3	13.35	12.35	16.4	17.7
6th	PU'>	PU	PU'>	PU	PIJ>	NC«	PU «<	PU	PU	PU
	8.55	15.6	7.7	7.4	13.55	7.5	5.7	7	8.9	10.5

'Abbreviations **as in Table I.**

Signtficant gender differences in the same **region: higher C>) or lower (<) acceptance.** ***(P* <0.05).**

Situations. The different samples showed the following percentages of full acceptance of different kinds of aggression in six justifying circumstances:

1. Acting in self-defense was the most justifiable situation for the overall Spanish populations, followed by protecting others, with no significant differences between these categories. These top two situations differed significantly from the next three which obtained similar scores, and all of them from "punishment," which was the most rejected circumstance.

2. There was a consistency of ranks in all Spanish regions (Table I) with exactly the same situations ranked lst ('self-defense').2nd ('altruism') and last 'punishment'), indeed rather similar scores. The other three situations did not differ in any of the samples. Andalusian students scored above the Spanish average, whereas Castilians were below it, for all the situations, except for communication problems. Basques showed a profile close but slightly higher than to the Spanish average, except for 'punishment', which was lower than the Spanish average.

3. No significant gender differences were found in any of the six potential justifying circumstances, when the type of aggressive act was not considered (Table II). Nevertheless, females showed a slightly higher acceptance than males' for communication difficulties, and for emotional states, as generators of aggression.

4. A comparison of samples of the same sex between regions (Table II) showed the following differences:

Females. Catalans alone did not rank 'punishment' in the lowest position, putting 'non-communication' in its place, significantly differing from Castilians, who ranked it (op (7.55% vs. 32.4% Z = 2.96. $P < .05$), and to Basques who put it 2nd (7.55% vs. 28.5%, Z = 2.4. $P < .05$). Andalusians rated 'altruism' the highest, significantly differing from Castilians (39.85% vs. 19.75%, Z = 2.26, $P < .05$).

Males. Castilians (21.25%) rated 'non-communication' significantly higher than Andalusians (11.25%,Z = *22.5*,$P < .05$) and Basques (l8%, Z = 3.S4,P < .05), and 'punishment' significantly lower than the rest of Spanish men (Andalusians: Z = 2.78; Catalans: Z = 3.80; Basques: Z = 4.00; all: $P < .05$).

Interactions between acts and situations.

1. When the acceptability of each kind of aggression was rated according to the type of justifying circumstance, 43 specific combinations were analyzed in each sample. Table Ill shows the five combinations which received the highest and the lowest acceptance. Catalans expressed 'hindering on behalf of others' at the top, and ranked 'hitting in self-defense' only in the 3rd position, which was the highest approved combination in the other three Spanish regions. 'Emotionality' justified some kinds of aggression in several regions: for instance, 'hindering' (4th for Catalans) and 'shouting angrily' (4th for Andalusians and 5th -. for Castilians). 'Killing' and "torturing", extreme forms of violence, were consistently the lowest accepted items in all regions. There was an interesting exception: Basques did not

score “killing” among the lowest combinations.

2. Sixty-four of the full list of 258 possible combinations between the four regions, i.e., 25%. presented significant differences between one another (Table IV). Justifying circumstances such as personal defense or defense of others, and problems of communication, were generally accepted by Andalusians and rejected by Catalans. For both populations the less violent acts were preferred: verbal abuse, being ironic, fits of rage. and hindering. Nevertheless, Catalan students expressed significantly more the justification of physical violence for defense of their own property. Basques also rated higher than the other regions in the justification of emotionally motivated aggressive acts, such as fits of rage and even killing.

3. A gender comparison of the degree of acceptance for each combinatiom in each region showed 33 significant differences (Table IV). Males expressed higher approval scores than females in 18 cases (especially for defense of themselves, on behalf of others or protecting their own property, and even justified the use of violent acts such as ‘torturing’, ‘killing’, ‘hitting’, and ‘threatening’). Females were higher than males in 15 (most related to emotional agitation or communication problems, and with emotional responses showing only indirect aggression, such as fits of rage or shouting angrily).

TABLE III. The Most and the Least Accepted Act-Situation Combinations In the Different Spanish Samples’

Rank	**Andalusta** (N=92)	**Basque C** (N=lOO)	**Catalonia** (N=40)	**Cast ile** (N=l20)	**Spain** (N=352)
Most	HtSD	HtSD	HdAL	HtSD	HtSD
2nd	lrAL	HdAL	HdSD	lrAI	HdAL
3rd	HdSD	IrAL	HtSD	RaSD	HdSD
4th	Hd AL	I-Id SD	Hd EM	lid SD	Sr AL
5th	SIIEM	RaSD	IrPU	S1tEM	RaSD
			To SD		
	KiPu		ToAL		
—Sib	T0PU	ToPU	ToDP	TOEM	T0PU
—4th	HtNC	HINC	HtNV	HtPU	HtNC
—3rd	HtPU	HtPU	HPU	ToPU	HtPU
—2nd	KiDP	TaOS’	KiDP	KiDS’	KIDS’
Least	KiEM	ToEM	KiEM	KiEM	KiEM

Rsnked from the most to the least accented cc,mhinatinn Ahhr~~,.r.~nn~ .. T~i,t. I

TABLE IV. Full Admissible Aggression Forms in Various Justifying Circumstances In the **Four Spanish** Regions

		Andalusia		Basque C		Catalonia		Castile	
		Males	Females	Males	Females	Males	Females	Males	Females
Act	Situation	%	%		%	%	%	½	
Hz	SD	60	69	56	52	65 >	35	66	55
Hi	AL	41	43	40	32	35	25	45 >	IS
Hr	OP	30 >	55	22	20	20 <	50	IS	IS
Ki	SD	24	5	30>	16	25	20	30>	16
Sh	SI)	24<	52	IS	30	25	25’	20	31
Sh	EM	41	67	34 <	60	25	25~	45	45
Sb	ND	32 <	54	32	40	25	20	30	21
lr	SI)	43	58	42	52	55 > 30		42	55
Sr	AL	45 <	76	48	52	50	44)	45	SI
lr	EM	3-4<	58		36<S6		40>20		18<36
Jr	OP	37	28	20	IS	30>	IS	5	II
Sr	PU	24	37	24	28	35	20	IS	22

Ir	NC			32<49			28<44		45>	20			45<20		
To	SD	II	<	6	6		S	0		0--	S		S		
To	AL	13	<	4	2		2	0		0	10		5		
To	OP	II	<	2	0		0	0		~0	0		6		
Ru	SD	39	<	67	38	<	58	25		30	55		40		
Ra	EM	24		30	32		54	30>		50	25		33		
Ru	NC	11<		32	12		30	IC		0	10<26				
Tb	SD		45>	26		50>	34	44)		45			45>25		

Those circumstances showing **significant** gender differences in some region are cit~U (> **or** <). Abbreviations **as in Table I.**

Catalans produced eight gender differences (five involving 'being ironic') with males scoring higher in all, except for defense of one's own property by hindering, this being more often accepted by females. The seven gender differences of Castilians were rather diversified. Andalusians (12 differences) and Basques (six) showed very similar pat-tents between them: Whereas femaleg scored higher in combination related to emotionality ('being ironic' 'rage', and 'shouting' motivated by communication problems and emotional states), males justified higher defense-motivated violent responses, not excluding 'killing', or 'torturing'.

Comparison with Finnish and Polish Samples

Global level of acceptance. The average results were similar in the three samples: The level of acceptance was similar and no significant gender differences were found in the total score.

Acts. When scores of acceptance for eight categories of aggressive acts of different intensity and quality were compared, independently of the type of justifying circumstances, the following ranks were found: 'Hindering' was the most acceptable kind of aggressive behaviour, followed by 'threatening' and 'being ironic' with no significant difference in the three countries. Finns, however, were less tolerant toward irony, and Spaniards to threat. The most physically violent acts, 'torturing' and 'killing', were also the most disapproved. Whereas Spaniards and Poles rated all acts showing physical violence in the lowest ranks, the Finns rated a direct physical violent act such as 'hitting' at the same approval level, and even in higher rank (3rd), than some showing only verbal aggressive behaviour. A significantly higher approval for 'torturing' than for 'killing' showed by Poles, however, has not been found in any of the Spanish samples, nor among the Finns (Table V).

Comparing the ranks and scores for the eight different acts, Spaniards showed a higher acceptance of 'rage' (in 4th rank) instead of a ranking of 6th in Finland, and especially of 'shouting', which seems to be a rather positive Spanish peculiarity (a ranking of 1st or 2nd in all the regions, except in Catalonia), compared to the 4th in the other two countries (Table V).

No significant gender differences were found in any of the eight indices. Nevertheless, females reported higher than males in the approval of verbal aggression, such as 'shouting' and 'rage', and males higher than females in the acceptance of physical violence: 'threatening', 'hitting', 'killing', or 'torturing'.

TABLE V. Comparison of Acceptance Percentage for the Various Acts and Siu~tions in the Different European **Samples'**

Rank	Spain (N=352)	Finland (N=83)	Poland (N=64)
		Full **acceptance for aggressive acts**	
1st	Sr	Hd	Tb
2nd	lId	Tb	Sr
3rd	Sb	lIt	I-Id
4th	Ru	Sh	Sb
5th	Tb	lr	Ru
6th	lIt	Ru	Hi
7th	Ki	Ki	'lb
8th	To	To	Ki
		Full acceptance for jusiitying situations	
lit	SI)	AL	AL
2nd	AL	SO	SD
3rd	NC	OP	OP
4th	EM	NC	NC
5th	OP	PU	PU
6th	PU	EM	EM

Abbreviations as in Table I.

Situations. Acting in self-defense was the most justifiable situation for the Spanish sample, followed by protecting others, with no significant differences between both categories. The same preference was shown by the Finns and Poles, although in an opposite order: 'Altruism' was more acceptable than 'self-defense'. The most rejected circumstances for Finns and Poles were aggression as expression of 'emotional agitation' (6th) and as 'punishment' (5th), with no significant differences between both. In Spain. 'punishment' was also the lowest, but the disapproval of emotionally motivated aggression was not so strong as in the other two countries (4th vs. 6th); and, on the contrary, Spaniards did not seem to value the defense of one's property as worthy enough to justify aggression (5th vs. 3rd in Finland and Poland).

In Spain and Poland, no significant gender differences were found in any of the six possible justifying circumstances, when the type of aggressive act was not considered. In Finland, women found 'emotionality' and 'self-defense' significantly higher justifying circumstances than men did.

In the three countries the same combinations —' hindering on behalf of others' and 'hitting in self defense'— received the two highest approval scores (with the order reversed in Spaniards), and a third —'hindering in self defense'— was also among the five highest. All those five highest combinations in the three countries were related to circumstances of 'altruism' and 'self-defense'. Even more, these situations justified even physically violent acts, such as 'hitting for self-defense' (ranked in 1st or 2nd position) and 'on behalf of others' (ranked on 4th and 5th position for Finns and Poles, but only on 13th for Spaniards). 'Emotionality', highly justified some kinds of aggression in the Spanish samples, but was quite absent in the top five of the Polish and Finnish rankings.

Interactions between acts and situations. When the acceptability of each kind of aggression was rated according to the type of justifying circumstance, 43 specific com-

binations were analyzed in each sample. Table VI shows the five combinations which received the highest and the lowest acceptance.

TABLE VI, The Most and Least Accepted Act-Situation Justification Combinations In the Different European Samples'

Rank	Finland (N83)	Poland (N~64)	Spain (N=3S2)
Most	HdAL	HIAL	HISD
2nd	**HtSD**	**IStSOL**	**HdAL**
3rd	ThAL	ThAL	HdSD
4th	HIAL	HdSD	hAL
5th	HdSD	HtAL	RaSD
—5th	ToPIJ	ToEM	ToPU
—4th	HtEM	HdEM	HtNC
-3rd	**KIDS'**	**KiOP**	**HtPU**
-2nd	KIEM	HtNC	KIDP
Least	ToEM	K1EM	KjEM

'Ranked from the most **to the least accepted combination. Abbreviations** as in Table I.

The highest justifying circumstances for aggressive acts were absent among the 18 combinations yielding the lowest scores in all the three countries. The circumstances with lowest degree of acceptance for aggression were related to emotionaI states, by seven times in Finland and Poland (only one of them in Spain). and to protection of one's own property or punishment, with three times each. All these 18 combinations, with only one exception ('hindering others from action', 4th lowest in the Polish rank), expressed extreme physical violence: 'torturing' or 'killing' (Table VI).

Poles expressed six gender differences out of their 40 possible combinations: Males approved more highly in four occasions and females in two [Fraczek, 1985]. Sonic Polish data parallels that expressed by the Andalusians and Basques, in Spain: self-defense as justification for rage, in women, and for killing, in men.

DISCUSSION

Very sirtuilar degrees of the acceptance of interpersonal aggression were observed in all the populations studied. People of both sexes living in different geo-cultural areas expressed rather consistent altitudes toward different kinds of aggression, and the situations in which they were justified. This consistency in general opinion and moral judgements about approval standards of aggression by people from such different European societies suggests a certain universality of norms and beliefs about aggression. It might be that there is a moral code common to all human beings, based on what could be called, using a classical term, 'natural law'. Or, at least, our data give support to the existence of a moral code similar for Finns, Poles, and Spaniards, perhaps because they share to some extent a common Christian background. There may be, however, another quite different explanation: Felson's negative apperception may also apply to this kind of evaluation. When terms such as "aggression" and "violence" are used by lay persons, they are perceived as being negative and undesirable (via literature, the media, religion. etc.) so it may be hardly remarkable than even culturally differing groups show common disapproval of extreme forms of behavior (Paul Brain, personal communication).

Opinions about its justification correspond to a greater extent to rules that can be expected on the basis of common sense: Mild acts, such as verbal aggression, are more acceptable than violence resulting in severe injuries, and responses evoked by gross provocation are more permitted than unprovoked acts; defense of life is a more approved circumstance than defense of property, and both appear more valid than punishment. Moreover, different situations call for different kinds of acts; for exaniple, whereas problems of communication would justify only indirect aggressive acts, such as shouting angrily or fits of rage, physical violence would be accepted in other more vital circumstances, such as defense of life. Approval of some acts is, therefore, dependent on the context ILagerspetz and Westman, 1980].

Although the global degree of acceptance of aggression is similar for males and females, there are some gender preferences in the preferred combinations of aggressive acts and justifying-situations. Men tend to be initially more restrained than women but, once having determined to action, they seem more violent. Men were more likely to accept defense-motivated physical aggression (‘hitting’ ‘killing’, ‘torturing’), whereas women tended to approve attempts to solve emotional and communication problems by means of more emotional expressions, such as ‘shouting’ and ‘fits of rage’.

Related to the gender differences in some preferred combinations of aggressive acts and justifying situations, and without excluding other possible psychobiological causes, those gender tendencies, apparently common to people so different as Spaniards, Poles, and Finns, might also be related to different social expectations. Western societies allow women to express emotion more freely and to be more vociferous than men. From childhood little girls axe discouraged from playing aggressive games, whereas boys seem to be encouraged to do so [Ramirez and Mendoza, 1984; Fraczek, 19851. One must not forget that a simple toy—a doll or a sword—may reinforce children’s activities, shaping their ideas about how society expects them to behave.

The acceptance patterns were similar, but not identical, in the four Spanish regions. Attitudes toward aggression did not differ greatly when only the acceptability of the aggressive act was rated. Some minor regional differences however, were observed in some acts when they were rated in connection with possible justifying circumstances: then they were viewed as more or less legitimate in some situations, according to the importance given to these aggressive acts by the society to the accomplishment of an expected goal.

Castilian students tended to show the lowest degree of overall acceptance for aggression. Their patterns were similar to the Spanish average, but always below it, except in the case of communication problems. This might well be partially explained historically. Castilians never have felt themselves oppressed, given their historical rule over the rest of the country and their consequent cultural influence over other regions.

Andalusian students expressed the most permissive attitudes toward aggression, being generally above the Spanish average. They approved predominantly indirect aggressive behaviours, being significantly different for “shouting” compared with

Catalans, and for "being ironic" compared with Castilians. Their more characteristic combination was the relatively high approval of "shouting" in self-defense, on behalf of others, and when there are communication problems, and for "rage" as a last resort and as punishment. These results correspond in some ways to their stereotype of being emotional, socially open, vocal, and exaggerated people,

Catalans, in contrast to Andalusians, found altruism and communication problems little reason to justify even indirect aggression. This agrees with their stereotype of being a less-communicative and more socially distant people. Their most characteristic combination was defense of their personal property as a justification for shouting and even for physical violence, such as 'hitting'. This was the exception to the preference for otherwise less violent acts, and for the high value given to self-control. They scored above the average for 'threatening' (similar to Finland) and 'hindering', and they were the least likely to justify 'shouting' and 'rage'. Their more 'educated' way of solving problems corresponds quite well to their stereotype of being 'cooler' and less emotional compared to the rest of the Spaniards. Similar tendencies were observed in Finland whose population is also considered to be 'cool' and to have high emotional control [Lagerspetz and Westman, 1980; Ramirez, 1991].

The Basque degree of acceptance of global aggression was the closest to the Spanish average. Their five top-ranked combinations, and three of their five lowest ones, also coincided with the overall Spanish population, suggesting that they are not a highly punitive society. Like the Andalusians, Basques were likely to favor emotionally motivated acts. Their most characteristic combinations, with significantly higher acceptance than in other regions, where fits of rage due to emotional .agitation, and the justification of killing for defense of own's property, or even in response to emotional agitation. These data might correspond to their stereotype of irrationality [Ramirez and Sullivan, 19871. As none of their lowest combinations related to 'killing', highly violent acts only seem justified by a highest necessity. The same happened with 'torturing' in the Polish sample. Many people within these two societies might be convinced that violence was the only way to improve the plight of their ethnic or national group. Violent acts, like killing and torturing, may be regarded as more justified by people who wish to achieve values which they believe vital. The same behavior might be regarded differently by other societies convinced that violence is quite unacceptable, or an immature way of coping with frustration. The same 'aggressor', therefore, may be considered a 'terrorist' by one society and a socially desirable 'resistance-hero' by another. Common beliefs about the harmfulness of certain acts, therefore, may be modified when motivation is considered [Fraczek, 1985].

Comparing the ranks of scores for acts and situations between the samples of the different countries, some minor differences were found. Spanish students valued emotionality as a justification for aggression to a higher extent than the Finns and Poles did, and, consequently, their disapproval of emotionally motivated forms of aggression, such as shouting angrily, fits of rage, or being ironic, was lower. This agrees quite well with the stereotype of the "emotional" Latin people, and the "cooler" character of the Finns. Also, whereas Finns and Poles approved acts that were motivated by altruism more than those motivated by self-interest, as expected, in the Spanish samples a self-serving motive, such as self-defense, was the most acceptable. It might be that Spaniards have a

lower social concern, partially due to a poorer civic education than in other Western societies. A third difference was that, whereas both Finns and Poles found 'altruism', 'self-defense', and 'defense of property' equally justified (they were the three top ranked circumstances without any significant difference among them), the Spaniards ranked 'defense of property' only in 5th position, with a score significantly lower than the two highest ones (U = -3.3. $P < .05$).

When considering the development of norms in relation to aggressive behavior it seems reasonable to ask whether any behavior would be unacceptable in all contexts, and whether the efforts to reduce or to abolish aggression should be applied equably to manifestations. We need to ask about the possible justification in particular circumstances and, indeed, whether some aggressive acts are legitimate in some situations. We should not forget that as the terms 'aggression' and 'violence' are used most frequently when the response is deemed 'excessive' or 'inappropriate', one is likely to get consistent relationships between high intensity acts and mitigating circumstances (Brain, personal communication). Aggression, at least in some of its many meanings, can effectively control interpersonal situations and should be used to protect oneself or others, to maintain control, or to cause a necessary change [Feshbach, 1979; Fraczek, 1985].

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TAIJINTEKI KOUGEKI KOUDOU NI TAISURU TAIDONO HIKAKU BUNKATEKI KENKYU.
(**Cross-cultural study of attitudes toward interpersonal aggression)**.

By

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*Kwansei Gakuin Daigaku Syakaigakubu Kiyou***.** 78: 97-103 (1997) (in Japanese language)

31

JUSTIFICATION OF INTERPERSONAL AGGRESSION IN JAPANESE, AMERICAN AND SPANISH STUDENTS

by

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ABSTRACT

632 university students of both sexes, 242 Japanese (137 males and 105 females), 190 Spanish(71 males and 119 females), and 200 students from the United States (100 males and 100 females), completed a questionnaire that examined their attitude towards various kinds of aggression directed at other people in different situations which ranged from self defense to a method of overcoming comunication problems. Factor analysis revealed three factors: physical aggression (killing, torture, and hitting), direct verbal aggression (shouting and rage), and indirect verbal aggression (being ironic and hindering). The basic factor structure of the Japanese, the Spanish and the USA samples was similar. In all samples, men showed a higher justification of physical aggressive acts in any situation and of indirect verbal aggression in non-defensive circumstances. Cultural differences were found in the degree of justification of the three factors: in all kind of situations Japanese students showed a lower justification of indirect verbal aggression, but a higher justification of direct verbal aggression than U.S.A. and Spain samples. Physical aggression in defensive situations is justified more by Americans than by Japanese and Spanish students. These findings suggest the existence of a common basic moral code about physical aggressive acts, but there appears to be a cultural influence on moral codes concerning verbal aggressive acts. Oriental cultures, with an interdependent construal of self, seem to be more permissive about direct verbal aggression compared to Western cultures, but they have less tolerance towards indirect verbal

aggression. There were practically no significative difference between American and Spanish scores.

KEY WORDS: interpersonal aggression, attitudes, moral justification, norms, acts, situations, uncertainty avoidance, independence vs. interdependence, Japan, USA, Spain.

INTRODUCTION

Certain situations elicit different behaviors depending upon the characteristics of the person confronted as well as the nature of the particular situation. Depending upon the situation, there appears to be some behaviors that are considered admissible by most, almost as if there were some moral code ruling their justification. The moderating role of norms explains the fact that when no norms were present, subjects tend to use the highest levels of coercion (Lee & Tedeschi, 1996). One behavior modulated by these common norms and values is aggression. In an atmosphere favourable to aggression, people engage in it more frequently and with greater intensity than in situations in which there is a predominance of common disapproval (Ramirez, 1996).

Are the moral rules relating to different forms of aggression which make them acceptable under particular circumstances characteristic of each society? Or on the contrary, is there a certain universality of norms and beliefs? Although the influence of the psychosocial environment on behavior cannot be disentangled from the biological one, cross-cultural studies, with their eventual similarities and differences, can help us to understand which bio-social processes are involved in aggressive behavior. One way of understanding human aggression is therefore viewing it from a cross-cultural perspective (Segall, 1988).

Lagerspetz, Fraczek and Ramirez (Lagerspetz & Westman, 1980; Fraczek, 1985; Fraczek, Ramirez & Torchalska, 1987;

Ramirez, 1991, 1993), using questionaires in different European societies, explicitely investigated not only whether the situation affects a person's attitude towards aggression but also whether one's culture and environment have a significant effect on the acceptance of aggressive acts. Ramirez (1993) analyzed the attitudes of students from four different regions in Spain by asking how they would accept eight categories of aggressive acts of different levels of intensity and quality in different types of justifying situations, and reported only minor differences among them. The same questionnaire was also applied to students from another two different European countries: Poland and Finland. The findings were very similar in the degree of acceptance of interpersonal aggression in all the populations studied (Ramirez, 1991) .

This consistency in moral judgements by people of such different societies would suggest a certain universal moral code common to all human beings. However, since all three countries studied were European and, although each has its own culture, language and customs, they share to some extent a common Christian background. Thereafter, before making a more valid general statement appliable to all the humanity, it would be advisable to make further comparisons with other different and contrasting cultures with quite different religious backgrounds, such as is found in Oriental societies.

Some differences in culture may also be linked to differences in the way the self is construed as well as societal regulations. Markus and Kitayama (1991) pointed out that there are strikingly different construals of the self, of others and of the independence of the different construals in different cultures that have a set of specific consequences for cognition, emotion and motivation. Asian cultures, such as Japan, have an interdependent construal of

the self, they are socially oriented, and they are concerned with fitting in, belonging, promoting other's goals and being indirect. On the contrary, Americans typically have an independent view of the self and seek independence from others. Although Markus and Kitayama did not examine the consequences of such differences on aggressive behavior, these are expected to affect aggression too: Japanese may be more repressed compared to Americans. Further, since the laws concerned with activities related to aggression differ in both countries -e.g., having guns is illegal in Japan but legal in America-, these differences may also be linked to different degree of justification of interpersonal aggression.

Hofstede's uncertainty avoidance dimension would lead to a different prediction. According to him (Hofstede, 1991), in high uncertainty avoidance cultures, aggressive behavior of the self and others is acceptable; however, individuals prefer to contain aggression by avoiding conflict and competition (Gudykunst & Antonio, 1993). Hofstede points out that Japan and Spain are high and USA low in uncertainty avoidance. Since Ramirez studied attitudes toward interpersonal aggression in European cultures which are restricted by an independent view, the present paper advances this research by contrasting, on one side cultures having an independent view (Spain and USA) with a culture having an interdependent view (Japan), and, on another side, high avoidance cultures (Japan and Spain) with a low avoidance culture (USA).

According to Ramirez's previous findings (1991, 1993), it was expected similar, but not identical features in the overall degree of justification of aggression in the three populations, with some minor gender and cultural differences. These normative beliefs would also moderate the escalation of aggression, justifying and instigating a proportionate

retaliation to unjustified norm-violations (see also: Da Gloria & De Ridder, 1977; Lee & Tedeschi, 1996). In the three of them, to a certain extent their justification would correspond to rules based on common sense: mild acts, such as verbal aggression, would be more acceptable than stronger ones involving physical aggression; gross provocation would permit greater approval than unprovoked aggression; and people would be more likely to approve acts motivated by altruism than those by selfishness.

MATERIALS AND METHODS

Subjects

Data were obtained from a total of 632 subjects of both sexes, born and living in Japan (137 males and 105 females), in Spain (71 males and 119 females), and in the U.S.A. (100 males and 100 females). All were of very similar age (from a range from 18 to 21 years), and attending University as undergraduate students. Even if the data of all students attending a certain lecture time were collected, for this study only those subjects whose families were from an urban environment were selected. Given the typical multicultural American society, to minimalize eventual ethnical differences within the USA group, care was also taken to select only those students of Caucasian origin with parents born in the States. This problem did not exist in the another two samples: all subjects were either of Japanese or of Spanish origin respectively.

Questionnaire

Subjects were asked to complete an anonymous questionnaire which examined attitudes towards interpersonal aggression. It involved eight categories of aggressive behavior (acts) of different intensity and quality: hitting, killing, shouting angrily, being ironic, using torture, having a fit of rage, threatening or hindering another person from doing something. Each category of acts is accompanied by a list of six different circumstances (situations) which may serve to justify each act: in self-defense, protection of another person, due to emotional agitation, in defense of one's property, as a punishment, or as a way of overcoming communication difficulties. The task consisted of rating the justification of a given behaviour under specified circumstances, using a two-point scale: whether the subjects would justify or not each act in each situation. Translated versions from the original Spanish version of CAMA (Cuestionario de Actitudes Morales y Agresión) were applied. For more information, see Ramirez (1993).

Statistical analysis:

Factor analyses were performed on two scores, namely an act score and a situation score. The eight act scores were computed by adding a particular action response for each of the six situations and then dividing it by six. Similarly, there were six situation scores, calculated by adding the responses for each of the eight acts within each of the six situations and then dividing the score by eight. A 3 (culture: Japan, USA or Spain) x 2 (sex: male or female) x 2 (situation: defensive or non-defensive) ANOVA, with two independent variables (culture and sex) and one repeated variable (situation) was also conducted.

RESULTS

Act scores

A factor analysis of act scores for the Japanese, USA, and Spanish samples are shown in Tables 1, 2 & 3 respectively.

INSERT TABLES 1,2 & 3 ABOUT HERE

The Japanese results indicated that "Torture", "Hitting", "Killing", and "Threatening" had high factor loadings on the first factor which was interpreted as a physical aggressive behavior factor. The second factor loadings of "Being ironic" and "Hindering" were high, and it was interpreted as an indirect verbal aggressive behavior factor. The third factor had high loadings on such acts as "Rage" and "Shouting", and it was named direct verbal aggressive behavior factor.

The basic factor structure of the Spanish and USA samples was similar to the Japanese one, although very small differences were observed on the factor loadings of "Threatening" and "Hitting".

Situation scores

The results of factor analyses of situation scores for the Japanese, USA, and Spanish samples are shown in Tables 4, 5 & 6 respectively.

INSERT TABLES 4,5 & 6 ABOUT HERE

The first factor of the Spanish sample and the second factor of the USA and Japanese ones were considered as a defensive situation factor which involved "In self-defense" and "For protecting another person". On the contrary, the first factor of the USA and Japanese samples and the second factor of the Spanish one were interpreted as a non-defensive situation factor with high factor loadings in such situations as "A way of overcoming communication", "Due to emotional agitation", and "A punishment". Thus, the factor analyses of situation scores showed also a similar pattern of behavior for the three different cultural groups.

Three way ANOVAs for the aggressive behavior factor scores. The ANOVA data are included as an Anexe; and mean factor scores and standard deviations as a function of culture, sex, and situation, are shown in Table 7.

INSERT TABLE 7 ABOUT HERE

The ANOVA of the **physical aggression** factor scores revealed significant main effects of sex [$F(1,626)=10.40$, $p<.01$], situation [$F(1,626)=153.20$, $p<.01$] and culture [$F(2,626=13.75$, $p<.01$]. There was a higher justification of physical aggression in males than females [M=0.14 vs. M=0.09]. Aggressive behavior was more justified in defensive situations than in non-defensive ones [M=0.18 vs. M=0.05]. Japan and USA populations showed a higher acceptance of

physical aggression than the Spaniards [M(Japan)=0.13, M(USA)=0.15 vs. M(Spain)=0.06]. A significant interaction effect of culture and situation was also obtained [F(2,626)=9.14, p<.01]. Whereas there was no cultural differences in the justification of aggression in non-defensive situations, in defensive situations the USA sample showed a higher tendency to report willingness to be physically aggressive [M(USA)=0.25 vs. M(Japan)=0.18 and M(Spain)=0.10].

Significant differences were found in the ANOVA of situation [F(1.626)=288.26, p<.01] and culture [F(2.626)=23.15, p<.01] for **direct verbal aggression**. Defensive situation scores were higher than the non-defensive ones [M=0.80 vs. M=0.59]. The scores of the direct verbal aggression were higher in the Japanese sample than in the other two culture samples [M(Japan)=0.78 vs. M(USA)=0.63 and M(Spain)=0.65].

The ANOVA of the **indirect verbal aggression** factor scores revealed significant differences in situation [F(1.626)=227.28, p<.01] and culture [F(2.626)=35.77, p<.01]. Defensive situation scores were higher than the non-defensive ones [M=0.79 vs. M=0.59]. The scores of the indirect verbal aggression were lower in the Japanese sample than in the other two culture samples [M(Japan)=0.56 vs. M(USA)=0.75 and M(Spain)=0.77]. There was also a significant interaction between sex and situation [F(1,626)=6.32, p<.05). There was no sex difference in defensive situations, but males showed a higher justification of indirect verbal aggression in non-defensive situations [F(1,1252)=7.32, p<.01: M=0.61 vs. M=0.57].

Sumarising, the ANOVA of the physical aggressive factor scores revealed significant effects of country, gender and situations on the justification of this kind of aggression. Also, a significant interaction effect of country and

situation was obtained on the justification of direct verbal aggression. Finally, the ANOVA of the indirect verbal aggressive factor scores showed a significant main effects of country and situation and a significant interaction between sex and situation.

DISCUSSION

The factor analyses of both act and situation scores based on the responses to the questionnaire showed relatively little difference among the samples from the three cultures studied. All of them showed the same trend in their degree of justification: there were differences in the intensity of support or disapproval towards different forms of aggressive behavior under given circumstances. To a certain extent, they corresponded with rules based on common sense. The factors fall into three groups varying in the degree of directness, that is, from less aggressive "indirect verbal aggression" to "direct verbal aggression" and finally to "physical aggression"; mild acts, such as verbal aggression, were more justifiable than stronger ones, such as physical aggression. Similarly, from the situation scores based on the questionnaire responses of the three cultural samples, gross provocation, such as "defensive situations", was approved of more than "non-defensive situations". In few words, the basic factor structure was significantly similar for the Japanese, the USA and the Spanish samples for both the action and the situation scores (see also: Ramirez & Fujihara, 1997).

Moral judgements were also clearly influenced by the recognition of the intentions and legitimacy adscribed to the "aggressor". Actions violating norms and perceived as illegitimate, therefore, were a source of justification of

proportionate retaliation, even when this violates the same norms. People were also more likely to approve acts motivated by altruism than by selfishness. A previous study of different Spanish regions (Ramirez, 1993), however, showed that Spanish students were less motivated by altruism than by self-interest; for example, Catalans expressed a higher justification of the defense of one's property than of the defense of others. This release of the inhibitory effect of the norm, recently described by Lee and Tedeschi (1996), may be interpreted either by Berkowitz's (1993) theory of reactive aggression which states that a norm violation might create a desire to hurt, or simplely according to the biblical *lex talionis* (an eye for an eye), a level of aggression similar to the same violation of the norm.

Although, as expected, the global degree of justification was similar for men and women, there was some evidence of sex differences in some combinations of aggressive acts and justifying situations. In all cultural groups, men showed a significantly higher justification of physical aggression as well as of indirect verbal aggression in non-defensive situations. There was no significant differences between both sexes in direct verbal aggression nor in indirect verbal aggression in defensive situations. This finding of a higher justification of physical aggression in males is concordant with Rohner's (1976) and Bjorqkvist et al. (1992) findings in younger subjects. The latter Finish research team also found similar results with respect to verbal aggression, being no sex differences. Contrary to our present studies, however, they observed that at 15 years of age girls had a higher level of indirect aggression.

Present data also differed partially from other previously reported ones (Ramirez, 1991, 1993) which described a higher approval of verbal aggression by women; an eventual explanation of this discordance, however, is that

Ramirez analyzed verbal aggression globally, without distinguishing between 'direct' and 'indirect' as has been done in the present study. Finally, according to Bonino and Fraczek's (1996) studies with Italian and Polish students, the level of approval of all kinds of antisocial behavior was higher in boys than in girls. In addiction, they also found that adolescents from big cities had a higher approval of antisocial behavior than the rural one, which we were not able to corroborate since we limited our study to only urban subjects.

The existence of some overall sex differences in attitudes toward aggression indicates that there are also limits to how aggressively one thinks he/she should act when confronted with a particular situation. However, it does not have to be necesarilly explained by genetical causes. Cultural influences can also account. Aggressive behavior is a product of cultural influences acting largely through culturally mediated childhood experiences. A simple toy -a doll or a sword- may reinforce children's activities, shaping their ideas about how society expects them to behave (Ramirez, 1994). In many societies, for example, women are allowed to express emotions more freely than men. Males and females may also be taught very differently about handling emotions: parents discuss emotions and feelings more with daughters, except about causes and consequences of anger, which are talked about more with sons. The different experiences of males and females may impact on their tendencies to behave aggressively. Consequently, in any attempt to understand aggression it is necessary to know what those experiences are.

Social approval of aggressive behavior was found to be culturally differentiated with respect to the three aggressive factors: physical aggression, indirect verbal aggression and direct verbal aggression. Japanese students

showed a higher justification of direct verbal aggression but, on the contrary, a lower acceptance of indirect verbal aggression than students from America and Spain. These results suggest that differences in culture may be linked to differences in self-defense as well as societal regulations. Asian cultures, such as Japan, socially and collectivism oriented and with an interdependent construal of the self, are concerned with fitting in, belonging, promoting other's goals and, according to our data, with a higher justification of direct verbal behavior. The more independent view found in the individualistic Western societies, on the contrary, seem to explain their higher permisivity in indirect verbal aggression. Although it is not yet clear the explanation of why people with different construals of the self also show differences in their attitudes toward aggression, a possible speculation of this difference may be that interdependent cultures, like the Japanese one, are more permisive to the expression of emotions related to anger than independent cultures, especially given that the scales used to measure direct verbal aggression consisted of rage and anger, representing the emotional aspects of anger (Ramirez et al., in preparation).

Although our results on physical aggression -showing a higher degree of justification in Japanese and USA students than in the Spaniards- were not totally consistent with Hofstede's prediction, according to which in high uncertainty avoidance cultures, such as in Japan and Spain, aggressive behavior of self and others would be acceptable, they were consistent, however, with Hostede's masculinity score: similarly high in Japaneses and in Americans while low in Spaniards (Hofstede, 1991). Although further research will be needed to confirm this speculation, the masculinity dimension therefore might be somehow related to attitudes toward aggression.

A cultural difference was also found depending of the situation: American students expressed higher justification of physical aggression in defensive situations than the Japanese and Spanish students did [no significant differences were found between these last two groups]. Could differences in laws concerned with activities related to aggression - e.g., having guns is illegal in Japan and in Spain, but legal in America- have an influence on this precise difference in the degree of justification?

While there were overall effects independent of culture for both sex and situation, cultural differences were also found to be dependent on the situational context and the sex of the person responding. These differences suggest that one's culture and nature of the immediate situation significantly affects one's attitudes toward interpersonal aggression, which is consist with Ramirez's (1993) findings.

In contrast to Ramirez (1991, 1993), however, but in keeping with Wapner's (1987) contextual emphasis that the person-in-environment is a unit to be analyzed, cultural differences were found between Japan and USA when the context was taken in account. These different findings regarding culture may be because Ramirez's samples were restricted to European nations, whereas the present analysis includes subjects from more diverse cultures, namely Oriental Japan and Western America.

Socio-normative attitudes towards aggression thus influence both: 1) socialization of aggression in the course of individual development, and 2) dynamics of violence in everyday social life (Fraczek, 1996). Norms and values can determine conflicts which may lead to violent aggressive encounters. We should not dismiss that culture has a significant effect on the acceptance of aggressive acts by means of its influences on the change of attitudes toward

aggression, even if attitudes will certainly not change unbludjeoned.

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MORAL APPROVAL OF AGGRESSIVE ACTS BY URBAN STUDENTS: A CROSS-NATIONAL STUDY ON FOUR CONTINENTS*

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with

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ABSTRACT

This paper reviews the results of two decades of research on moral approval of aggressive acts conducted in several countries throughout the world. A nationally-adapted version of the Lagerspetz and Westman questionnaire was administered to university students in Poland, Spain, Japan, the United States, Iran and South Africa, as well as the original Finland. The questionnaire asks respondents to indicate their approval of several aggressive acts of different quality and intensity in the context of different social justifications. Although slight method variations preclude the possibility of direct comparison, the pattern of effects in the different countries leads to interesting conclusions. In all countries: more drastic forms of aggression (e.g., killing, torture) are less accepted, whereas common and nondangerous forms of such behavior (e.g., shouting) are more accepted; and aggressive acts that are socially justified (in terms of protection of self or other) are clearly more accepted than ones with no such justification. However, there are also some striking differences among the countries studied. Thus, patterns of moral approval of various kinds of aggressive acts are only to some extent common in contemporary world, while differences among countries in these attitudes are culturally bound.

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Introduction

How a person evaluates aggression, and to what extent he or she justifies it, depends on a wide variety of factors including personality, aspects of lifestyle such as choice of profession or attitude toward life or the Weltanschaaung, as well as prevailing norms. Thus different observers are likely to perceive different behaviors as aggressive (Brown and Tedeschi, 1976).

There is good reason to assume that societies have moral codes suggesting approved or disapproved types of aggression under particular circumstances. Are these codes, which suggest when different forms of aggression may be acceptable or not in particular situations, unique to each society? Or, on the contrary, is there a certain universality of norms and beliefs common to all human beings? Although the influence of the psychosocial environment on behavior cannot be disentangled from the biological one, cross-cultural studies can help us understand which biosocial processes are involved in aggression.

Attitudes toward interpersonal aggression have been explicitly studied in several contrasting societies. In order to investigate the moral approval of aggression in different situations from the observer's perspective, a questionnaire was constructed by Lagerspetz and Westman (1980), and subsequently revised by Lagerspetz and Björkqvist (1985) and Ramirez (1986a). Since the degree of approval would depend on the qualities of the behavior observed, the items describe different types of aggressive behavior in combination with situations in which they may be conducted. Subjects assess their personal degree of approval of aggression during particular circumstances.

Besides being utilized in Finland (Lagerspetz and Westman, 1980; Lagerspetz et al., 1988), this questionnaire has been used in Britain (Benton, Kumari, and Brain, 1982), Poland (Fraçzek, 1985; Fraczek, Ramirez, and Torchalska, 1987), Spain (Ramirez, 1986a; 1991; 1993), Japan and the U.S.A.(Ramirez and Fujihara, 1997; Fujihara, Kohyama, Andreu and Ramirez, 1999), Iran (Musazadeh, 1999), and South Africa.

This chapter reviews and compares the patterns of moral approval of aggressive acts in different circumstances revealed in the studies conducted with different national samples. Although there are already many studies that make comparisons among a small (usually two) number of nations, the purpose of this chapter is to offer a broader comparison, in the hope that a more global approach can reveal even deeper insights about similarities and differences across different national groups. Such a comparison leads to interesting conclusions and allows us to consider the extent to which beliefs about the morality of particular aggressive acts vary by nation as well as by specific circumstances, allowing us to determine the extent to which moral approval of such behaviors may be universal.

Material and Methods

Subjects

Questionnaires were administered to 1595 students in seven different countries of Europe, Asia, America and Africa. All respondents, except for Finns who were in their late twenties, were between the ages of 18 and 21. All were natives of their country and had grown up in an urban environment. We selected only urban residents in order to minimize the effect of some other cultural (e.g., urban vs. rural) variables. Except in the case of Iranian and Japanese samples, only data from Caucasian respondents were analyzed. Although data were collected from both sexes, this chapter examines only the average overall data.

Questionnaire

The morality of several aggressive acts of different quality and intensity was analyzed in the context of different social circumstances that may justify them. The eight categories of aggressive acts were: hitting, killing, shouting angrily, being ironic, using torture, having a fit of rage, threatening or hindering another person from doing something. Each category of acts was accompanied by a list of six different circumstances in which the aggressive behavior may be justified, namely: in self-defense, in protecting another person, as a consequence of emotional agitation, in defense of one's property, as a punishment, or as a way of overcoming communication difficulties. No examples of the behaviors or extra information were given; the particular meanings of each of the categories were left to the respondents. Similar versions of the questionnaire were completed, each one translated into the local language of each population: Finnish, Polish, Spanish, Japanese, English, Farsi, and Afrikans. The response scale for the questionnaire varied by sample, including a two-point scale (acceptable vs. not acceptable), a three-point scale (always, sometimes, never), and a four-point scale (usually, in some cases, in extreme cases, never).

Since aggression may be approved of in one situation but not in another, and this questionnaire was intended to investigate specifically such differences, the measurement of internal consistency relevant to the entire version is meaningless. However, the internal consistency of the subtests (the varying acts of aggression) has been calculated on Finnish, Spanish, and Iranian populations. The internal consistency for the subtests in the Finnish population was .91, calculated with Cronbach's alpha (Lagerspetz & Bjorkqvist, 1985). The value for a Spanish sample, applying the Carmines' Theta values, which is similar to the Cronbach's alpha, was quite satisfactory at .87 (Peña, Andreu, Muñoz-Rivas, 1997). Likewise, the Cronbach's alpha value for 560 Spanish subjects and 492 Iranian counterparts (total N = 1,052) was .88 (Musazadeh, 1999).

Results

The present comparison is limited to the ranking of the approval of acts, situations

and act-situation interactions in the different samples (see Tables 1,2,3).

Table 1: Rank of Approval for Aggressive Acts
in Urban Students from Several Countries

	Finland	Poland	Spain	USA	Japan	Iran	South Africa	
year	1980	1985	1999	1999	1999	1999	1999	
sample n	83	64	210	200	242	492	304	N =1595
rank								Average
1st	hd	th	ir	sh	ra	hd	hd	hd =2.29
2nd	th	ir	ra	ir	ir	ir	ir	ir = 2.29
3rd	ht	hd	hd	hd	sh	ra	ra	sh =3.43
4th	sh	sh	sh	ra	hd	sh	sh	ra = 3.43
5th	ir	ra	th	th	th	th	th	th = 4.00
6th	ra	ht	ht	ht	ki	ht	ht	ht = 5.71
7th	ki	to	ki	to	ht	to	ki	ki = 7.29
8th	to	ki	to	ki	to	ki	to	to = 7.57

hd = hindering; *ir* =being ironic; *sh* = shouting; *ra* = rage; *th* = threatening; *ht* = hitting; *ki* = killing; *to* = torturing

Table 2: Rank of Approval for Justifying Situations
in Urban Students from Several Countries

rank	Finland	Poland	Spain	USA	Japan	Iran	South Africa	Average
1st	DO	DO	DO	DO	SD	PU	DO	DO = 1.71
2nd	SD	SD	SD	SD	DO	DP	SD	SD = 2.00
3rd	DP	DP	DP	DP	DP	SD	DP	DP = 2.88
4th	NC	NC	EM	NC	PU	EM	PU	PU = 4.29
5th	PU	PU	PU	EM	EM	DO	EM	EM = 5.00
6th	EM	EM	NC	PU	NC	NC	NC	NC = 5.14

DO = defense of others; SD = self defense; DP =defense of property; PU = punishment; EM = emotional reaction; NC = problems of communication

Table3: Most and Least Accepted Act-Situation Combinations for Urban Students from Several Countries[57]

	Finland	Polan d	Spain	Japan	Iran	South Africa
Most accepted	hdAL	htAL	htSD	hdDP	raDP	hdDO
2nd	htSC	htSC	hdDO	hdDO	raDO	hdDP
3rd	thDO	thDO	hdSD	irEM	raSD	hdSD
4th	htDO	hdSD	irDO	shEM	raPU	hdPU
5th	hdSD	htDO	raSD	irSD	shDP	shDP

-5th	toPU	toEM	toPU	kiEM	kiDP	kiPU
-4th	htEM	hdEM	htNC	toEM	htNC	toEM
-3rd	kiDP	kiDP	htPU	kiPU	kiEM	toNC
-2nd	kiEM	htNC	kiDP	toNC	toNC	kiEM
least accepted	toEM	kiEM	kiEM	kiNC	kiNC	kiNC

[57] Data for the interaction of acts and situations were not available for the US sample

These summary tables reveal several patterns of results that are quite striking and give us an idea of the extent to which moral approval for aggressive acts varies by culture and by situation or shows consistency across samples.

With regard to specific acts: It is not surprising to discover that mildly aggressive acts were more acceptable than stronger and more drastic acts. For example, striking or shouting met with more approval than killing. Hindering, a passive aggressive act, was accepted by the largest number of respondents. Verbal aggression (shouting, being ironic, rage) was considered to be more acceptable than physically aggressive acts; there was a similar degree of approval for the different kinds of verbal aggression. Threat received an approval rating between those of physical aggression and of verbal aggression; it is interesting, though, to point out that it was one of the most highly justified acts in Poland (1st) and in Finland (2nd). Acts of physical aggression (hitting, killing, torture) were the least justified ones in all samples; they always received less approval than the rest, except in Finland, where hitting was the 3rd most justified within physical aggression. Hitting was always more approved than the other two kinds of physical aggression, with no significant differences between killing and torturing.

With regard to situations, gross provocation led to more approval of retaliation than did unprovoked aggression. For example, killing was considered more justified for altruistic reasons than as a mere expression of bad temper. Socially justified aggressive acts, such as those conducted in protection of self or other, were clearly more accepted than ones with no such justification (e.g. as an expression of emotions, as a result of communication difficulties); Defensive acts -- of self, property, or another person -- were generally seen as more morally justified. An intriguing exception was the Iranian sample in which punishment was the most justified situation, and defending others only the 5th among six. Within defensive situations, defending others and self defense received more moral approval than did defending property. Punishment, emotional reaction, and communication problems as circumstances for aggression action were seen as the least justified.

With regard to least and most acceptable acts within the context of particular situations[58], 87% of the highest five circumstances where aggression was justified were those related to defense, with only two others due to emotion in Japan (3rd and 4th places), and another two (Iran and South Africa) due to punishment (4th place in both cases). The most approved acts in different circumstances were the mild ones, with a predominance of hindering in Japan and South Africa, and rage in Iran (four of the five in each of these countries). In all the countries, the five interactions in which aggressive acts were least justified were those related to physical aggression: torturing and killing (83.3%), and hitting (17%). The only exception was hindering as an emotional reaction, which was the 4th least accepted in Poland. Killing as an emotional reaction was among the five least justified acts in all the countries studied. Torturing as an emotional reaction and killing to defend property were among the five least justified acts in two thirds of the countries studied. Killing because of communication problems was the least approved in half of the samples.

[58] Given the large number of combinations (8 x 6 x 7 = 336), a detailed presentation of all of them will not be made in the present paper.

Discussion

A comparison of the results, after analyzing both act and situation scores, showed a similar but not identical average level of approval of interpersonal aggression in all of the samples studied. The basic rankings were similar among people of such contrasting cultures. There were similar trends in all nations, corresponding to rules based on "common sense." And certain acts were never justified, regardless of cultural context.

However, certain cultural differences did emerge. Both in relation to seriousness, as well as to the kind of justification of manifested aggression, there ware striking differences among the countries studied.

Irony was considered in Poland, Spain, South Africa and USA samples as less harmful behavior than in Finland, Japan and Iran, where it was treated as a quite serious offense.

Aggressive behavior as a means of punishment had very low acceptance in Finland, Poland, Spain, and the USA but relatively high approval in Japan and Iran. In Iran, punishment was the most justified situation.

The level of approval of rage was the most varied one among the different countries: high among Asians (Japan and Iran), but low among Nordics (Finland and Poland). This is consistent with the training of Nordic children, who are expected to express themselves in 'a more reasonable way,' instead of in a rather juvenile, emotional way. For example, Nordic parents often share with their children decision making about family issues. Thus these children learn that the expression of emotion and anger shows a lack of skills.

The fact that Iran and Spain approved of emotionality as a justification for aggression to a greater extent than other countries may be partially explained by the typical 'emotional' warmness of 'Mediterranean' countries, among which, sociologically speaking, Iran might be included. This typically feminine stereotype (females approve more of emotional reasons) also agrees with the low masculinity score found in Spaniards by Hofstede (1991) and by Fujihara et al. (1999).

Some other rather 'odd' findings may be due to problems of translation of some terms, such as a higher approval of hitting and a very severe judgment of irony among the Finns, or the low justification of defense of others, ranking only the 5th among six in Iran. The Finnish word for 'irony,' for example, is not as mild as the English word; it would perhaps be better translated as mockery, ridicule, or derision (Lagerspetz, personal communication).

Subpopulations defined in terms other than geography may also have different codes for the acceptance of aggression. A study done in Finland (Lagerspetz, Björkqvist, Björkqvist, Lundman, 1988) with people of several professional backgrounds (i.e., not only university students) showed that different groups of people within the same country had rather differing attitudes toward aggression. As one might expect, soldiers held rather positive attitudes toward aggression, whereas conscientious objectors had more negative

attitudes toward aggression. The conscientious objectors had lower total approval scores, and especially for items related to defense, killing, and torturing. Similarly, Bonino and Fraçzek (1996) found that approval of antisocial behavior was greater among adolescents from big cities than among those from rural areas. (This was one of the reasons that we limited our study to respondents from urban environments.)

The consistency and overall similarities in moral approval for aggression by people of such different and contrasting societies suggest a sharing of similar standards of approval, as if there were some common moral code ruling their justification. And the unsolved but unavoidable question would be whether this certain moderating role of moral norms common to most human beings (and perhaps universal) might be explained in terms of a common cultural background or in terms of biological roots common to the human species, or even partially shared with other animal species.

In fact, in similar ways as human beings are not alone in their ability to use tools, to communicate in sophisticated ways, to have a conception of mind, and to manipulate others through aggression or reconciliation, *Homo sapiens* may not be the only species to construct a moral order. Empathy, sympathy, a sense of justice, and moral systems are not unique to human beings; we share these with other animals (Ramirez, 1986b). Empathy (the feeling of what another is feeling) is also shown in chimpanzees. Cooperation is common to many animals; they not only know one another well enough to synchronize their behavior, but they can also predict the outcome of a common effort. Wolves regularly coordinate their hunts and then share the meal; vampire bats share blood by regurgitating it for their offspring; ants, termites and bees are well known as social insects; dolphins and whales quickly close ranks when faced with danger and protect the ones they know best or beach themselves rather than abandon a sick mate; elephants prop up a sick relative and keep a vigil until death is obvious, and they fondle the bones of their dead.

Moral systems grow not from some lofty sense of equality and righteousness but from the simple need to get along; they are rules to deal with internal competition in a group. What motivates animals to do right or wrong are the necessities and burdens of social living, a constraint we all share; for example, when resources are in short supply, fights break out. Primates combine high intelligence with intense social interaction, forming long-lasting friendships with non-relatives, maintained in a tit-for-tat manner. The cognitive basis for morality can be found in the behavior of other animals, which in turn suggests a long evolutionary history for the human approach to social life. Our moral rules must be viewed as part of our biological -that is, evolutionary- heritage, something that connects us with other animals. The forces of natural selection have molded all animals. If morality is a product of natural selection, an unavoidable outcome of social living, then there is nothing so special about our particular brand of right and wrong (De Waal, 1996). Like people, other animals are organized into networks of rank and status, in which members apply force or respond to coercion; they also make calculated decisions about whom to intimidate and whom to harm. There is, therefore, a deep connection between people and apes in aggression and violence (Ramirez, 2000).

These biological roots of morality (Ramirez, 1986b) do not preclude the influence of culture on judgments about aggression. What is judged to be healthy self-assertion is

influenced by prevailing cultural norms and role expectations in any given society. Each society has a code, written or not, about acceptance or justification of different forms of aggression in different specific circumstances. According to Bandura's social learning theory, the predominant attitudes in a society would be an important factor in the expression of aggression: violent acts would be more frequent and intense in a favorable environment than when, on the contrary, there is a social disapproval. Judgments of aggressiveness reflect the values and interests of those doing the judging. Although there are cases of violence that clearly cannot be tolerated in any civilized society, such as murder and torture, other behaviors may be labeled as dangerous or socially unacceptable merely because they are offensive to group sensibilities or because they challenge or upset an immoral or unjust status quo. Moreover, which youngsters get identified as excessively aggressive in the core sense of causing or threatening physical injury may be more reflective of social stereotyping than objective assessment of the individual child's conduct and propensities. Children who are judged to be overly aggressive often come from poor and fragmented communities and belong to minority groups that have suffered from discrimination and negative social stereotyping.

The studies on which the comparisons in this chapter were made are not fully comparative from a methodological point of view, e.g. different samples, different time of collecting data, different number of alternatives, lack of availability of some original raw data, etc. Also there is often significant distortion due to difficulties with translation. Some of the 'odd' or unexpected results found in the present comparison may be explained in terms of the different meanings of a term applied in each language. Finding words that correspond well in all languages is one persistent dilemma in all cross-cultural research that depends on verbal measures.

Another limitation of the present comparison should be acknowledged. As in most other research on this topic, the participants were undergraduate students. The fact that overt expression of anger is quite clearly not something observed very often in normal university students and that they score low on questionnaires dealing with the frequency of overt aggression and on angry and aggressive dispositions, such as the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957; Buss & Perry, 1992) or the State Trait Anger Scale and the Anger Expression Scale (Spielberger et al. 1986), makes generalization to other less educated populations somewhat problematic. This makes the appearance of so many similarities across the different studies even more remarkable. Future studies should focus on populations of other ages and educational levels.

Conclusions

A comparison of the results from these countries shows similar but not identical justification of aggressive acts in urban students of both sexes in all the countries, with some rather minor cultural differences. In all countries studied:

• mild aggressive acts were more acceptable than stronger aggression;
• provoked aggression was approved of more than unprovoked aggression; and
• people of all cultures were more likely to approve acts motivated by altruism than by selfishness.

These overall results suggest a certain universal moral code common to all humanity, although with minor differences according to sex, culture, and education. Thus it can be concluded that:

• the mean moral code (average over all combinations of situations and acts of aggression) does not favor aggressive behavior as a means of resolving conflicts, except in 'extreme cases' (Ramirez, 2000);
• patterns of moral approval of various forms of aggressive acts are only to some extent common in contemporary world, while differences among countries and professions in these attitudes are culturally bounded.

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ANGER PRONENESS IN JAPANESE AND SPANISH STUDENTS*

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ABSTRACT

In this study existing hostility and trait anger were measured in order to examine individual proneness to anger, either as a subjective experience or as an objective expression. The Anger Situation Questionnaire (ASQ) was administered to 425 university students (195 in Japan, and 230 in Spain). No significant sex differences were found in any of the samples for proneness either to anger experience or to anger expression. Proneness to anger experience did not differ as a function of national background. But some cultural differences were found: Japanese students reported feeling more proneness to anger expression than did the Spanish ones. Proneness toward subjective experience of anger and to objective angry expression thus seems to be rather universal, even if open to minor peculiar differences due to sex and culture.

Introduction

One of the complex issues in the study of aggression has to do with multiple causation (Ramirez, 1994, 1996, 1998, 2000; Ramirez et al. 1980). Aggression may result from emotional responses elicited by frustrating or otherwise aversive events. The degree of response may be further determined by the individual's disposition to react aggressively to such events. Individuals may differ in their proneness to emotional responding of particular kinds, notably to anger. Ethnic and cultural differences may also influence the quality and level of this individual proneness.

Research on hostility and human aggression often concentrates on measuring overt behavior as a stable personality trait, but it does not pay enough attention either to subjective experience, such as aspects of emotion or action readiness, or to the intensity of the emotion and its relation to aggressive behavior.

Anger has been rather neglected as an object of study. This neglect may be due in part to anger being such a complicated emotion to study. Not only is it difficult to elicit anger in a naturalistic and ethical way, but it is also the case that merely participating in an

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experiment often elicits moderate fear and anxiety thereby producing mixed emotional response. In addition, the experience or the feeling of anger is often socially inhibited, and the duration of overt anger is relatively short, making it difficult to capture the different manifestations of the emotion (Van Goozen et al., 1994a). Most experimental research on anger has concentrated on its physiological indications, such as the blood pressure (e.g., Ax, 1953; Schwartz et al., 1981; Stemmler, 1989). Little, however, has been done to study the antecedents of emotional behavior, which are of relevance to the incidence of anger as well as aggressive tendencies. We think this approach would be a useful focus.

The emotion of anger, defined as "being displeased about an undesirable event attributed to someone else's blameworthy deed" (Mees, 1993), is experienced when one blames someone for harm received or done. Consequently, the focus of attention is on a blameworthy agent or action. The corresponding action readiness mode is that of correcting the harm received, either in a constructive way (assertion) or in a destructive way (aggression). Anger proneness thus is a personality characteristic conceived of as individual proneness to appraising emotional situations in an angry way (anger experience) as well as to angry responding (anger expression). This concept of 'anger proneness', defined by the combination of anger, assertiveness, and aggressiveness, helps to distinguish between different ways of appraising a situation, each giving rise to different emotions, different types of behavioral inclinations to express or not express oneself in an angry way ('action readiness'), and different levels of 'arousal', reflecting the urgency of the situation.

Overt aggressive behavior is not necessarily related to anger as an emotion, nor does anger always lead to aggressive response, although both are closely and often linked (e.g., Averill, 1982; Berkowitz, 1990). However, since there is no simple one-to-one correspondence between experiencing anger and expressing it as aggressive behavior, a simple one-dimensional approach is not sufficient. In order to predict anger, a more dynamic approach involving both constructs (i.e., anger and aggression) is needed.

This has been the primary reason for selecting a measuring instrument designed by Van Goozen, the Anger Situation Questionnaire (ASQ). This measure focuses on the frequency of experienced anger and on the frequency of expressing anger in assertive and aggressive ways, instead of overt aggressive behavior. A vignette measure of anger proneness views individual differences in anger proneness as consisting of a tendency to react angrily to various types of events, and as being comprised of: (a) differences in the tendency to appraise emotional situations in angry terms, and (b) differences in thresholds for angry responding, i.e., the disposition to show angry action readiness. Whether a certain situation leads to anger experience and to its expression can depend in an important part on individual characteristics, such as sex or personality, and for another part on the socio-cultural context of the situations (see: Van Goozen et al. 1994 a and b, 1996; Ramirez, 1991, 1993; Fujihara et al., 1999).

The purpose of this study was to examine the subjective experience of anger and the objective expression of anger among students of two countries with quite different and specific cultures. Spain may be included within a Western cultural tradition (results of previous studies of our own research group may allow us to recognize common attitudes toward aggression with other European countries like Finland and Poland; see Ramirez,

1991, and in this volume), even with some peculiarities typical of the Hispanic culture. Japan, on the contrary, far from being a representative of the average Oriental culture, shows a cultural specificity. In fact, it is notable for its unique cultural traits, even in comparison to neighboring Asian countries from the 'Kanji Area' (Tanaka et al., 1994); Japanese society still believes itself to be ethnically and culturally homogeneous.[59]

> Among the characteristic display rules of the Japanese is their famous tendency to minimize the show of emotions, especially in the presence of someone of authority. This is a norm followed by students, for example, when they mask their upset with a poker face in front of a professor. Barnlund's (1975) studies of cultural communication patterns in college students also show that Japanese individuals appear to reveal less of themselves both verbally and physically. He found that they manifested a 'more limited' portion of their public self (the portion shared with others), while Americans manifested a larger public self through a variety of behaviors including facial expressions, physical animation, and gestural flamboyance.

Spaniards also show some stereotypical characteristics that may have implications in the performance and evaluation of aggressive acts. For example, a typical feature of the Hispanic culture, within which Spain is usually included, is its respect for authority, particularly the authority of the family (Ramirez, 1967), or the characterization of their families as dominated by males (Sorenson and Telles, 1991), who have traditionally held the dominant position in the home and community. This may lead to an oversimplified and often inaccurate *machismo*, a concept that embodies the idea of male authority, and includes a high degree of aggressiveness and tolerance for aggression (Ramirez, 1967; Ingoldsby, 1991; Archer, 1994).

> Although there is a lack of directly relevant research on ethnic or cultural differences between Japan and Spain, some cultural differences in anger and aggressive tendencies already have been reported in previous research: Japanese students showed more justification of physical and direct verbal aggression than Spanish ones, whereas justification of indirect verbal aggression, as well as hostility and anger, were higher among Spaniards (Andreu et al., 1998; Ramirez et al., 2001 a).

Gender differences in aggression have been the subject of extensive investigation. Modern reformulations of Darwin's theory of sexual selection predict greater competitiveness and risk taking among males than among females (Trivers, 1972; Daly and Wilson, 1988). Higher intensity of overt expression of aggression as well as greater proclivity towards physical aggression has usually (Eagly and Steffen, 1980; Basow, 1992; Fujihara et al., 1999), but not always (Spielberger et al., 1983), been found in men. Although women generally appear to be less aggressive than men and their anger

[1] *Nihonjinrom* (the 'theory of the Japanese') propones that "Japanese are unique, that their culture and language cannot be understood by foreigners, than in any case most communication between Japanese takes place in mystic silences not in language, and even that there are basic biological differences between the Japanese and everybody else, e.g. a different brain structure." (Clammer, 1997, p. 113)

experiences, too, are found to be less frequent or less intense, the issue of sex differences in angry behavior is far from settled. For instance, the experience or even the feeling of anger often is socially inhibited, especially for women. As Richardson and Green (1999) recently argued, one explanation for gender differences in aggressive behavior may be the likelihood of social sanctions for such behavior. Men seem to be more experienced in expressing aggressive behavior and to express more aggression in anger-provoking situations. Anger experiences, too, are found to be more frequent or more intense in men than in women (for a review see: Eagly and Steffen, 1986; Frody et al. 1977; White, 1983).

The inhibition of anger expression is likely to be especially strong among Japanese women. In Japanese culture, for example, women are expected to use longer, more polite verb forms than men; and young girls are taught never to stop smiling, no matter how angry they are, for fear of being thought 'un-feminine' if they speak their minds. Another Japanese stereotype is that of female passivity, described by Samu Yamamoto, in his 1994 Japanese bestseller *A Groper's Diary*. The author confesses to having lurked on crowded trains and groped a dozen women every day for 26 years: most victims were too embarrassed to cry out.

In sum, we might predict that expression of anger would vary as a function of culture and sex. We expected anger expression to be more inhibited among Japanese than among Spanish students; and we expected women to be more inhibited than men. In addition, Spanish males, who are less likely to be inhibited by either sex or culture, might report more anger expression than any other group. Japanese women, who are likely to be inhibited by both sex and cultural expectations, might report less anger expression than any other group. One might also argue that anger experience would be less likely to vary by sex or culture because that is a private event, one that is less likely to be subject to inhibitory social influences than overt expression. On the other hand, it might be the case that inhibitory effects could be so powerful as to affect the actual emotional experience, in which case we would expect cultural and sex differences in anger experience as well as anger expression.

Materials and Methods

Subjects

Data were obtained from 425 undergraduate students of very similar age (from 18 to 21 years): 195 subjects were born and living in Japan (48 males and 147 females) and attended the Kwansei Gakuin University near Kobe; 230 were born and living in Spain (56 males and 174 females) and attended the Universidad Complutense in Madrid.

Questionnaire

Respondents were asked to complete an anonymous questionnaire, which was a shortened version of the ASQ (17 from the total 42 vignettes contained in the complete version) to establish their anger proneness. They were asked to imagine being in each of the situations described and to indicate: a) which emotions they would experience if they were to find themselves in that specific situation, selected from five different emotion labels representing common emotional experiences; and b) what they would feel inclined to do if they found themselves in the situation (five possible action tendencies specifically tailored

to the situation under consideration; these action tendencies were later converted to five categories that created an ordinal, angry expression scale). Three aspects of the dependent variable, anger disposition, were measured in each vignette or hypothetical scenario: the emotional angry experience, the felt intensity of the emotional experience, and the feeling of anger expression or angry action readiness in reaction to a number of common anger-provoking situations.

An anger proneness score was calculated as the individual percentage score for the anger experience (emotion category 5) and a summed percentage score for the action tendency categories, which show assertive behavior and anger expression (action categories 1 and 3, respectively in the ASQ vignette included as example).

Table 1. Example of vignette

Imagine the following situation is happening to you: a friend borrowed one of your books. It was one of your favorite books and you always took great care with it. After repeatedly asking for it back, he finally returns it unapologetically, with several pages loose and filthy.

What would you feel in this situation?

Em1: nothing
Em2: sad
Em3: helpless
Em4: disappointed
Em5: angry

Please, indicate how strong or how intense your feeling would be:

Int1: little intense
Int2: slightly intense
Int3: rather intense
Int4: quite intense
Int5: very intense

What would you feel like doing in this situation?

Act1: saying to him: “you can keep this one and buy me a new copy”
Act2: to look at him angrily but say nothing
Act3: cursing him and telling him that this is the last time he will ever borrow something from me
Act4: not letting him see what I feel
Act5: trying to forget the whole incident and asking for a new book on my birthday

Results

The sex and cultural differences for proneness to anger experience and expression were studied using a Z-test for differences between two proportions. All statistical tests were conducted with a rejection criterion of $p < .05$ and $p < .01$.

The results, presented in Tables 2 and 3 (below), lead to following conclusions:

11. Japanese students reported being more prone to *anger expression* than the Spanish students did (22.9% vs. 6.9%).

12. This cultural difference in proneness to *anger expression* was true for both male and female respondents (22.5% for Japanese males vs. 7% for Spanish males; 23% for Japanese females vs. 6.9% for Spanish females).

13. No significant differences in proneness to *anger experience* were found between Japanese and Spanish samples (62.4% vs. 54.9%).

14. There were no significant differences due to culture in proneness to *anger experience* for either males or females.

15. No significant sex differences were found for proneness to anger expression (Table 1), or in proneness to anger experience (Table 2) in either the Japanese or in the Spanish sample.

In sum, the level of proneness to anger expression was significantly higher in the Japanese sample than in the Spanish one, but the levels of proneness to anger experience were not significantly different in the two countries. Significant gender differences in proneness to anger expression or anger experience were not found in either of the two samples.

Table 2. Proportion of Expression Scores that Involved Angry Responses

	Spain	Japan	p
males	72% n = 56	55% n = 48	.03
females	62% n = 174	39% n =147	.001
total mean	62.2% n = 230	39.5% n = 195	.001
p	.98	.95	

Table 3. Proportion of Experience Scores that Involved Assertive or Aggressive Responses

	Spain	Japan	p
males	53%	61.6%	ns

	n = 56	n = 48	
females	55.5% n = 174	62.6% n =147	ns
total mean	54.9% n = 230	62.4% n = 195	.12
p	ns	ns	

Discusion

The purpose of this study was to examine the subjective experience of anger and the objective expression of anger among university students of two countries with quite different and specific cultures, Japan and Spain. The main finding was that anger experience is rather universal, but there are few cultural differences in proneness toward angry responding.

Culture influences the way feelings are expressed. A student's poker face or a girl's embarrassment about crying out, for instance, is characteristic of a Japanese norm of minimizing the show of emotion. This inhibition of behavioral display is quite opposite to the lower disapproval (or higher justification, if you prefer) of emotionally motivated aggression in Latin societies (Ramirez, 1991). On the contrary, in accordance with the stereotype of Latin people in many Anglo-Saxon countries, Spaniards may often show anger, hostility, and threat attitudes that really do not become aggressive attacks. This lack of expression of emotions among Japanese, however, does not necessarily mean a lack of feelings or propensity towards it, but just the expectation that people should keep their experiences inside, not showing them. This explains why, in spite of showing an absence of differences in proneness to anger experience, we found different levels of proclivity towards aggression (we called it 'anger expression'), a product of having learned some almost opposite cultural rules.

Our present results, showing a higher proneness towards anger expression in the Japanese sample than in the Spanish one, do not apparently match with the famous Japanese reticence about expression of emotions, which would suggest less expression of anger among them. Being more passive or more subject to social control would lead to a lower rate of aggressive behavior than in other cultures directly involved in 'real' anger expression, but it would not necessarily follow that it also has to be so at affective levels. And we should emphasize that the ASQ assesses feelings about anger reactions rather than their actual expression (it was explicitly stressed to the subjects in the questionnaire that "the question asked was not what would they do, but rather

what they would feel inclined to do"). We should remember that the only way of studying subjective experience is to ask people what they are experiencing, and what you measure here is what they would feel like doing rather than what they would do (see also: Ramirez et al., 2001 b, and in press).

A possible speculation for why a higher justification of physical and direct verbal aggression among Japanese students was also found in previous research (Ramirez and Fujihara, 1997; Fujihara et al., 1999) may be that interdependent cultures, like the Japanese one, are more permissive of the expression emotions related to anger. This higher score for aggressive responding within the Japanese sample is consistent with the stereotyped image of the Japanese as being barbaric and warlike. Research by Eiko Ikegami (1995) on the Japanese *samurai* class, shows that, although attitudes will not change easily, violence is cultural and can be redirected historically in an appropriate social setting. Japan's so-called harmonious collective culture is paradoxically connected with a history of conflict with roots in the process of state formation along very different lines from that seen in Europe. *Samurai* were transformed into a hereditary class of vassal-bureaucrats.

Contrary to our predictions that sex differences might exist in the behavioral expression of anger, but that they would be small or non-existent in proneness to anger experience, we found no sex differences of either sort (van Goozen et al., 1996, Ramirez et al., 2001 a). This absence of differences is consistent with recent data of Spielberger et al. (1995), who also failed to find any sex differences in the intensity of angry feelings or in the frequency of anger experiences among a heterogeneous sample or more than a thousand adults. Similar results have previously been described elsewhere: males and females typically do not differ on measures of anger (Buss and Perry, 1992; Archer et al., 1995; Harris, 1996). A global degree of justification for direct verbal aggression also has been found to be similar for males and females (Björkqvist et al., 1992; Fujihara et al., 1999). Perhaps our student should have examined gender differences in anger expression, not in the amount of its expression (intensity or frequency) but in its quality (i.e., men and women would experience and express anger in different ways). For example, Thomas (1993; referred to in Spielberger et al., 1995) found that women were more likely to discuss their anger and that their trait anger was strongly related to perceived stress.

Although our Japanese and Spanish samples differed in their proneness to anger expression, it is still unclear whether anger can be aroused equally readily in both sexes or in different cultures. We also need more information on the extent to which overt anger expression is the same or different with regard to its intensity and nature. This also

indicates the important implications of research like that presented here.

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CULTURAL AND GENDER DIFFERENCES IN ANGER AND AGGRESSION A COMPARISON BETWEEN JAPANESE, DUTCH AND SPANISH STUDENTS*

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The present research is part of a series of cross-cultural studies which have the overall aim of investigating which bio-social processes may be involved in aggression. This issue is complex due to its multiple causation (Ramírez, 1994, 1996a, 1998, 2000; Ramirez et al. 1980). Aggression can be elicited by frustrating or otherwise aversive events (Dollard, Miller, Doob, Mowrer & Sears, 1939), and from the individual's disposition to react aggressively to

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such events. Ethnical and cultural differences, may also influence the quality and level of this individual proneness. Individuals may differ in their proneness to emotional arousal of particular kinds, notably to anger. Most experimental research on anger has concentrated on its physiological indications, but little has been done to study the antecedents of emotional behavior which are of relevance to the incidence of anger, such as the possible relationship between aggression and individual proneness to anger. Our specific purpose was to find whether there was any interesting gender and cultural differences in this eventual relationship. It can be supposed the importance of biological characteristics, as well as of the socio-cultural context of the situations which allows, encourages or refrains the experience of anger and the expression of aggression by norms and values.

Measuring anger proneness at an individual level can be an important source of information for predicting intensity of anger and aggressive behavior when confronting a subject with an anger-eliciting situation. 976 University students (195 in Japan: 48 males and 147 females; 551 in the Netherlands: 187 males and 365 females; and 230 in Spain: 56 males and 174 females) completed 17 vignetes of anger proneness, focusing on the frequency of experienced anger and on the frequency of assertive and aggressive tendencies: three dimensions of anger disposition were measured in each hypothetical scenario, a stand-in of a valid representation of a real-life situation: the emotional experience, the felt intensity of emotional experience, and the action readiness in reaction to a number of common anger-provoking situations. This Anger Situation Questionnaire (ASQ) was designed by van Goozen et al. (1994 a & b, 1995). Statistical tests were conducted with a rejection criterion of $p < .05$ and $p < .01$.

Our data showed that: 1) aggression resulted from the individual's disposition to react aggressively to such events; 2) anger proneness was not significantly different to both European samples, but aggression proneness was significantly higher in the Japanese students than in the European ones, the Spaniards being the lowest of the three samples; 3) no significant sex differences were found in any of the samples for aggression proneness, and the anger was higher among males than among females only in the Dutch sample.

In spite of showing different levels of proclivity towards aggression, a product of having learned some almost opposite cultural rules, Japanese and European anger proneness is not significantly different, as shown in the present research, in a similar way as it has been argued elsewhere (Ramirez, 1991, 1993; Ramirez & Fujihara 1997; Fujihara et al., 1999; Ramirez et al., in press a) differentiating feelings and attitudes toward interpersonal aggression. The higher aggressive responding within the Japanese sample matches with the stereotyped image of the Japanese as being barbaric and warlike.

Contrary to the predictions of some congruent sex differences -for instance, whereas females focus on emotional stimuli, becoming more upset by condescendent and insensitive behavior, males are more likely to become angry in response to physical aggression or hurting another person (Harris, 1993; Ramirez et al., in press b)-, gender differences affecting anger disposition and arousal and aggressive tendencies were small or non-existent in our present results, with the exception of the Dutch sample where males showed a significantly higher level of anger.

In few words, it is still unclear whether anger can be aroused equally readily in both sexes or in different cultures, and to what extent their overt anger expression is the same or different,

with regard to its intensity and nature, although the present results suggest that the proneness toward feelings of anger and angry responding is rather universal, even if open to minor peculiar characteristics for the different sexes and cultures.

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Anger Proneness in Japanese and Spanish Students

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In this study existing hostility and trait anger were measured in order to examine individual proneness to anger, either as a subjective experience or as an objective expression. The Anger Situation Questionnaire (ASQ) was administered to 425 university students (195 in Japan, and 230 in Spain). No significant sex differences were found in any of the samples for proneness either to anger experience or to anger expression. Proneness to anger experience did not differ as a function of national background. But some cultural differences were found: Japanese students reported feeling more proneness to anger expression than did the Spanish ones. Proneness toward subjective experience of anger and to objective angry expression thus seems to be rather universal, even if open to minor peculiar differences due to sex and culture.

Introduction

One of the complex issues in the study of aggression has to do with multiple causation (Ramirez, 1994, 1996, 1998, 2000; Ramirez et al. 1980). Aggression may result from emotional responses elicited by frustrating or otherwise aversive events. The degree of response may be further determined by the individual's disposition to react aggressively to such events. Individuals may differ in their proneness to emotional responding of particular kinds, notably to anger. Ethnic and cultural differences may also influence the quality and level of this individual proneness.

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Research on hostility and human aggression often concentrates on measuring overt behavior as a stable personality trait, but it does not pay enough attention either to subjective experience, such as aspects of emotion or action readiness, or to the intensity of the emotion and its relation to aggressive behavior.

Anger has been rather neglected as an object of study. This neglect may be due in part to anger being such a complicated emotion to study. Not only is it difficult to elicit anger in a naturalistic and ethical way, but it is also the case that merely participating in an experiment often elicits moderate fear and anxiety thereby producing mixed emotional response. In addition, the experience or the feeling of anger is often socially inhibited, and the duration of overt anger is relatively short, making it difficult to capture the different manifestations of the emotion (Van Goozen et al., 1994a). Most experimental research on anger has concentrated on its physiological indications, such as the blood pressure (e.g., Ax, 1953; Schwartz et al., 1981; Stemmler, 1989). Little, however, has been done to study the antecedents of emotional behavior, which are of relevance to the incidence of anger as well as aggressive tendencies. We think this approach would be a useful focus.

The emotion of anger, defined as "being displeased about an undesirable event attributed to someone else's blameworthy deed" (Mees, 1993), is experienced when one blames someone for harm received or done. Consequently, the focus of attention is on a blameworthy agent or action. The corresponding action readiness mode is that of correcting the harm received, either in a constructive way (assertion) or in a destructive way (aggression). Anger proneness thus is a personality characteristic conceived of as individual proneness to appraising emotional situations in an angry way (anger experience) as well as to angry responding (anger expression). This concept of 'anger proneness', defined by the combination of anger, assertiveness, and aggressiveness, helps to distinguish between different ways of appraising a situation, each giving rise to different emotions, different types of behavioral inclinations to express or not express oneself in an angry way ('action readiness'), and different levels of 'arousal', reflecting the urgency of the situation.

Overt aggressive behavior is not necessarily related to anger as an emotion, nor does anger always lead to aggressive response, although both are closely and often linked (e.g., Averill, 1982; Berkowitz, 1990). However, since there is no simple one-to-one correspondence between experiencing anger and expressing it as aggressive behavior, a simple one-dimensional approach is not sufficient. In order to predict anger, a more dynamic approach involving both constructs (i.e., anger and aggression) is needed.
This has been the primary reason for selecting a measuring instrument designed by Van Goozen, the Anger Situation Questionnaire (ASQ). This measure focuses on the frequency of experienced anger and on the frequency of expressing anger in assertive and aggressive ways, instead of overt aggressive behavior. A vignette measure of anger proneness views individual differences in anger proneness as consisting of a tendency to react angrily to various types of events, and as being comprised of: (a) differences in the tendency to appraise emotional situations in angry terms, and (b) differences in thresholds for angry responding, i.e., the disposition to show angry action readiness. Whether a certain situation leads to anger experience and to its expression can depend in an important part on individual characteristics, such as sex or personality, and for another part on the socio-

cultural context of the situations (see: Van Goozen et al. 1994 a and b, 1996; Ramirez, 1991, 1993; Fujihara et al., 1999).

The purpose of this study was to examine the subjective experience of anger and the objective expression of anger among students of two countries with quite different and specific cultures. Spain may be included within a Western cultural tradition (results of previous studies of our own research group may allow us to recognize common attitudes toward aggression with other European countries like Finland and Poland; see Ramirez, 1991, and in this volume), even with some peculiarities typical of the Hispanic culture. Japan, on the contrary, far from being a representative of the average Oriental culture, shows a cultural specificity. In fact, it is notable for its unique cultural traits, even in comparison to neighboring Asian countries from the 'Kanji Area' (Tanaka et al., 1994); Japanese society still believes itself to be ethnically and culturally homogeneous.[60]

Among the characteristic display rules of the Japanese is their famous tendency to minimize the show of emotions, especially in the presence of someone of authority. This is a norm followed by students, for example, when they mask their upset with a poker face in front of a professor. Barnlund's (1975) studies of cultural communication patterns in college students also show that Japanese individuals appear to reveal less of themselves both verbally and physically. He found that they manifested a 'more limited' portion of their public self (the portion shared with others), while Americans manifested a larger public self through a variety of behaviors including facial expressions, physical animation, and gestural flamboyance.

Spaniards also show some stereotypical characteristics that may have implications in the performance and evaluation of aggressive acts. For example, a typical feature of the Hispanic culture, within which Spain is usually included, is its respect for authority, particularly the authority of the family (Ramirez, 1967), or the characterization of their families as dominated by males (Sorenson and Telles, 1991), who have traditionally held the dominant position in the home and community. This may lead to an oversimplified and often inaccurate *machismo*, a concept that embodies the idea of male authority, and includes a high degree of aggressiveness and tolerance for aggression (Ramirez, 1967; Ingoldsby, 1991; Archer, 1994).

Although there is a lack of directly relevant research on ethnic or cultural differences between Japan and Spain, some cultural differences in anger and aggressive tendencies already have been reported in previous research: Japanese students showed more justification of physical and direct verbal aggression than

[1] *Nihonjinrom* (the 'theory of the Japanese') propones that "Japanese are unique, that their culture and language cannot be understood by foreigners, than in any case most communication between Japanese takes place in mystic silences not in language, and even that there are basic biological differences between the Japanese and everybody else, e.g. a different brain structure." (Clammer, 1997, p. 113)

Spanish ones, whereas justification of indirect verbal aggression, as well as hostility and anger, were higher among Spaniards (Andreu et al., 1998; Ramirez et al., 2001 a).

Gender differences in aggression have been the subject of extensive investigation. Modern reformulations of Darwin's theory of sexual selection predict greater competitiveness and risk taking among males than among females (Trivers, 1972; Daly and Wilson, 1988). Higher intensity of overt expression of aggression as well as greater proclivity towards physical aggression has usually (Eagly and Steffen, 1980; Basow, 1992; Fujihara et al., 1999), but not always (Spielberger et al., 1983), been found in men. Although women generally appear to be less aggressive than men and their anger experiences, too, are found to be less frequent or less intense, the issue of sex differences in angry behavior is far from settled. For instance, the experience or even the feeling of anger often is socially inhibited, especially for women. As Richardson and Green (1999) recently argued, one explanation for gender differences in aggressive behavior may be the likelihood of social sanctions for such behavior. Men seem to be more experienced in expressing aggressive behavior and to express more aggression in anger-provoking situations. Anger experiences, too, are found to be more frequent or more intense in men than in women (for a review see: Eagly and Steffen, 1986; Frody et al. 1977; White, 1983).

The inhibition of anger expression is likely to be especially strong among Japanese women. In Japanese culture, for example, women are expected to use longer, more polite verb forms than men; and young girls are taught never to stop smiling, no matter how angry they are, for fear of being thought 'un-feminine' if they speak their minds. Another Japanese stereotype is that of female passivity, described by Samu Yamamoto, in his 1994 Japanese bestseller *A Groper's Diary*. The author confesses to having lurked on crowded trains and groped a dozen women every day for 26 years: most victims were too embarrassed to cry out.

In sum, we might predict that expression of anger would vary as a function of culture and sex. We expected anger expression to be more inhibited among Japanese than among Spanish students; and we expected women to be more inhibited than men. In addition, Spanish males, who are less likely to be inhibited by either sex or culture, might report more anger expression than any other group. Japanese women, who are likely to be inhibited by both sex and cultural expectations, might report less anger expression than any other group. One might also argue that anger experience would be less likely to vary by sex or culture because that is a private event, one that is less likely to be subject to inhibitory social influences than overt expression. On the other hand, it might be the case that inhibitory effects could be so powerful as to affect the actual emotional experience, in which case we would expect cultural and sex differences in anger experience as well as anger expression.

Materials and Methods

Subjects
Data were obtained from 425 undergraduate students of very similar age (from 18 to 21 years): 195 subjects were born and living in Japan (48 males and 147 females) and attended the Kwansei Gakuin University near Kobe; 230 were born and living in Spain (56 males and 174 females) and attended the Universidad Complutense in Madrid.

Questionnaire
Respondents were asked to complete an anonymous questionnaire, which was a shortened version of the ASQ (17 from the total 42 vignettes contained in the complete version) to establish their anger proneness. They were asked to imagine being in each of the situations described and to indicate: a) which emotions they would experience if they were to find themselves in that specific situation, selected from five different emotion labels representing common emotional experiences; and b) what they would feel inclined to do if they found themselves in the situation (five possible action tendencies specifically tailored to the situation under consideration; these action tendencies were later converted to five categories that created an ordinal, angry expression scale). Three aspects of the dependent variable, anger disposition, were measured in each vignette or hypothetical scenario: the emotional angry experience, the felt intensity of the emotional experience, and the feeling of anger expression or angry action readiness in reaction to a number of common anger-provoking situations.
An anger proneness score was calculated as the individual percentage score for the anger experience (emotion category 5) and a summed percentage score for the action tendency categories, which show assertive behavior and anger expression (action categories 1 and 3, respectively in the ASQ vignette included as example).

Table 1. Example of vignette

Imagine the following situation is happening to you: a friend borrowed one of your books. It was one of your favorite books and you always took great care with it. After repeatedly asking for it back, he finally returns it unapologetically, with several pages loose and filthy.

What would you feel in this situation?

Em1: nothing
Em2: sad
Em3: helpless
Em4: disappointed
Em5: angry
Please, indicate how strong or how intense your feeling would be:

Int1: little intense
Int2: slightly intense
Int3: rather intense
Int4: quite intense
Int5: very intense

What would you feel like doing in this situation?

Act1: saying to him: “you can keep this one and buy me a new copy”
Act2: to look at him angrily but say nothing
Act3: cursing him and telling him that this is the last time he will ever borrow something from me
Act4: not letting him see what I feel
Act5: trying to forget the whole incident and asking for a new book on my birthday

Results

The sex and cultural differences for proneness to anger experience and expression were studied using a Z-test for differences between two proportions. All statistical tests were conducted with a rejection criterion of $p < .05$ and $p < .01$.
The results, presented in Tables 2 and 3 (below), lead to following conclusions:

a) Japanese students reported being more prone to *anger expression* than the Spanish students did (22.9% vs. 6.9%).
b) This cultural difference in proneness to *anger expression* was true for both male and female respondents (22.5% for Japanese males vs. 7% for Spanish males; 23% for Japanese females vs. 6.9% for Spanish females).

Table 2. Proportion of Expression Scores that Involved Angry Responses

	Spain	Japan	p
males	72% n = 56	55% n = 48	.03
females	62% n = 174	39% n =147	.001
total mean	62.2% n = 230	39.5% n = 195	.001
p	.98	.95	

a) No significant differences in proneness to *anger experience* were found between Japanese and Spanish samples (62.4% vs. 54.9%).
b) There were no significant differences due to culture in proneness to *anger experience* for either males or females.
c) No significant sex differences were found for proneness to anger expression (Table 1), or in proneness to anger experience (Table 2) in either the Japanese or in the Spanish sample.

Table 3. Proportion of Experience Scores that Involved Assertive or Aggressive Responses

	Spain	Japan	p

males	53% n = 56	61.6% n = 48	ns
females	55.5% n = 174)	62.6% n =147)	ns
total mean	54.9% n = 230	62.4% n = 195	.12
p	ns	ns	

In sum, the level of proneness to anger expression was significantly higher in the Japanese sample than in the Spanish one, but the levels of proneness to anger experience were not significantly different in the two countries. Significant gender differences in proneness to anger expression or anger experience were not found in either of the two samples.

Discussion

The purpose of this study was to examine the subjective experience of anger and the objective expression of anger among university students of two countries with quite different and specific cultures, Japan and Spain. The main finding was that anger experience is rather universal, but there are few cultural differences in proneness toward angry responding.

Culture influences the way feelings are expressed. A student's poker face or a girl's embarrassment about crying out, for instance, is characteristic of a Japanese norm of minimizing the show of emotion. This inhibition of behavioral display is quite opposite to the lower disapproval (or higher justification, if you prefer) of emotionally motivated aggression in Latin societies (Ramirez, 1991). On the contrary, in accordance with the stereotype of Latin people in many Anglo-Saxon countries, Spaniards may often show anger, hostility, and threat attitudes that really do not become aggressive attacks. This lack of expression of emotions among Japanese, however, does not necessarily mean a lack of feelings or propensity towards it, but just the expectation that people should keep their experiences inside, not showing them. This explains why, in spite of showing an absence of differences in proneness to anger experience, we found different levels of proclivity towards aggression (we called it 'anger expression'), a product of having learned some almost opposite cultural rules.

Our present results, showing a higher proneness towards anger expression in the Japanese sample than in the Spanish one, do not apparently match with the famous Japanese reticence about expression of emotions, which would suggest less expression of anger among them. Being more passive or more subject to social control would lead to a lower rate of aggressive behavior than in other cultures directly involved in 'real' anger expression, but it would not necessarily follow that it also has to be so at affective levels. And we should emphasize that the ASQ assesses feelings about anger reactions rather than their actual expression (it was explicitly stressed to the subjects in the questionnaire that "the question asked was not what would they do, but rather what they would feel inclined

to do"). We should remember that the only way of studying subjective experience is to ask people what they are experiencing, and what you measure here is what they would feel like doing rather than what they would do (see also: Ramirez et al., 2001 b, and in press).

A possible speculation for why a higher justification of physical and direct verbal aggression among Japanese students was also found in previous research (Ramirez and Fujihara, 1997; Fujihara et al., 1999) may be that interdependent cultures, like the Japanese one, are more permissive of the expression emotions related to anger. This higher score for aggressive responding within the Japanese sample is consistent with the stereotyped image of the Japanese as being barbaric and warlike. Research by Eiko Ikegami (1995) on the Japanese *samurai* class, shows that, although attitudes will not change easily, violence is cultural and can be redirected historically in an appropriate social setting. Japan's so-called harmonious collective culture is paradoxically connected with a history of conflict with roots in the process of state formation along very different lines from that seen in Europe. *Samurai* were transformed into a hereditary class of vassal-bureaucrats.

Contrary to our predictions that sex differences might exist in the behavioral expression of anger, but that they would be small or non-existent in proneness to anger experience, we found no sex differences of either sort (van Goozen et al., 1996, Ramirez et al., 2001 a). This absence of differences is consistent with recent data of Spielberger et al. (1995), who also failed to find any sex differences in the intensity of angry feelings or in the frequency of anger experiences among a heterogeneous sample or more than a thousand adults. Similar results have previously been described elsewhere: males and females typically do not differ on measures of anger (Buss and Perry, 1992; Archer et al., 1995; Harris, 1996). A global degree of justification for direct verbal aggression also has been found to be similar for males and females (Björkqvist et al., 1992; Fujihara et al., 1999). Perhaps our student should have examined gender differences in anger expression, not in the amount of its expression (intensity or frequency) but in its quality (i.e., men and women would experience and express anger in different ways). For example, Thomas (1993; referred to in Spielberger et al., 1995) found that women were more likely to discuss their anger and that their trait anger was strongly related to perceived stress.

Although our Japanese and Spanish samples differed in their proneness to anger expression, it is still unclear whether anger can be aroused equally readily in both sexes or in different cultures. We also need more information on the extent to which overt anger expression is the same or different with regard to its intensity and nature. This also indicates the important implications of research like that presented here.

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INDIVIDUAL DIFFERENCES IN ANGER REACTION TO NOISE

J. Martin Ramirez, J. M. Alvarado & C. Santisteban

ABSTRACT

Background: A review of the literature demonstrates an association between noise and anger. It is hypothesised, however, that this association would not be the same for every subject, but depend on a large range of psychobiological differences between individuals, dependent on age, sex, and noise sensitivity of each subject. The aim of this study was to investigate these eventual individual differences in how the subjective sensitivity to noise is associated to different dimensions of anger in adolescents of different age and of both sexes. Methods: For this purpose two self-report instruments were chosen: the Sensitivity to Noise test (SENSIT) (Santisteban, 1990, 1992) and the State-Trait Anger expression Inventory (STAXI) (Spielberger, 1988). Results: showed: a) a globally significant correlationship between sensitivity to noise and the different anger aspects: feelings (in anger state), temperament (in trait anger), and internal expression (in anger expression); and b) different characteristics according to the psychobiological peculiarities of each subject (subjective sensitivity to noise, age, sex). Conclusions: in accordance to the hypothesis, the present results suggest that noise may act as a stressor causing unwanted aversive changes in an affective state, such as anger; b) that these changes are related to several psychobiological characteristics of the subject, such as age, sex, and individual sensitivity to noise; and c) that noise sensitivity, measured by SENSIT, may be used as a good predictor of anger.

INTRODUCTION

There is an increasing interest in environmental issues of noise pollution (from disturbance and other adverse effects of airports neighbourhoods or annoyance of traffic noise or to too loud rock music), given its damaging effects on health and well being. According to a recent survey of the European Environmental Agency, almost 67% of the urban population has a noise impact over the limit of tolerance (65 dB). This fact has made prominent the problem of noise-induced hearing impairment. Besides these physical damages involving inner-ear mechanisms, the exposure to either intense sudden sounds (e.g. a close jet engine, greater than 120 dB) or to chronic noise that in the least is unpleasant (noise is often defined as 'unwanted sound'), may also have detrimental psychosocial effects (Alvarado, Delgado, Santisteban & Zuluaga, 1994; Shepherd, 1974; Staples, Cornelius, & Gibbs, 1999), and even lead to psychiatric disorders (Stansfeld, 1992; Stansfeld, Clarck, Jenkins & Tarnopolsky, 1986).

Already in the last 1970's, several studies in laboratory and in naturalistic settings showed adverse facilitatory effects of high-intensity noise on anger and subsequent aggressive behavior: high-intensity noise facilitated aggression for previously angered individuals (Bell, 1980; Donnerstein & Wilson, 1976; Sherrod, Moore, & Underwood, 1979; Turner, Layton, & Simons, 1975).

A review of the literature shows that an exposure to a moderate low frequency noise load (e.g. from an air-conditioning unit, 40-60 dB) can also have subtle but significant psychological morbidity, such as tiredness, concentration difficulties (Santisteban & Santalla, 1990, 1993 a, 1993 b), a feeling of pressure on the head (Berglund, Hassmén & Soames Job, 1994), mental performance impairment (Alvarado et al., 1994; Belojevic, Öhrström & Rylander, 1992; Persson Waye, Rylander, Benton & Leventhall, 1997; Smith & Jones, 1992; Smith & Stansfeld, 1986), general annoyance (Persson Waye & Rylander, 2001), irritability (Tarnopolsky et al, 1980), anger (Miller, 1974), and enhancing stress responding (Jelinkova & Picek, 1986; Persson Waye, Bengtsson, Rylander, et al, 2002). Noise does not have to be necessarily produced by high-level sounds therefore in order to induce deleterious effects. In a West London Survey, comparing symptoms of high and low noise exposure areas, it was found that symptoms did not increase with increasing levels of noise: acute symptoms were more common in high noise, but 20 out of 23 chronic symptoms were more common in low noise (Tarnopolsky et al, 1980). And even pleasant sounds (for instance, classical music, 75dB) showed more disturbing effects than silence on recall performance (Santisteban & Santalla, 1993 b).

The most widespread and well-documented subjective response to noise is annoyance, understood as a mild form of anger, with a relationship between noise exposure level and annoyance (Cohen & Weinstein, 1981; Santisteban, 1988; Stansfield, 1992, Stansfeld, Sharp, Gallacher, Babish et al., 1994). A modest but consistent association has usually been found between noise sensitivity (‘a predisposition to perceive noisy events’ (Taylor, 1984)) and noise annoyance (‘an attitudinal dimension indicating the extent to which noisy events are evaluated unfavourably’ (Taylor, 1984)), with an overall mean correlation from 11 studies of r=0.3 (Job, 1988). Zimmer & Ellermeier (1999) have also found a relationship between noise sensibility, measured by Weinstein’s scale, and trait anger, applying the STAXI). It seems evident therefore that there is a certain association between noise and anger.

This association between noise and anger, however, need not be the same for every subject. There is evidence of a large range of psychobiological differences among individuals, dependent on age, sex, and noise sensitivity of each subject (Jelinkova & Picek, 1986; Kryter, 1985; Weinstein, 1978), among other individual variables as a personality trait. Noise thus might cause morbidity within certain vulnerable groups, but not in others, according to individual subject characteristics. For instance, noise sensitivity showed a positive relationship with neuroticism and introversion, and a negative one with extraversion (Alvarado et al. 1994; Belojevic, Slepcevic & Jakovljevic 2001; Dornic & Ekehammar, 1990: Goldberg, 1972; Öhrström, Björkman, & Rylander, 1988; Stansfeld, 1992; Tarnopolsky & Morton Williams, 1980, Turrero, Zuluaga, & Santisteban, 2001).

The aim of this study was to investigate individual differences in how the subjective sensitivity to noise is associated to different dimensions of anger in adolescents of different age and of both sexes. For this purpose self-report instruments were chosen because, considering that sensitivity to noise and feelings of anger are subjective elements, they are central to a better understanding of the effects of noise in relation to anger (Stansfeld, 1992), nevertheless we are aware that psycho-physiological measurements may also be required to complement and provide external validation for the subjective measurements,

and that exploratory analyses may find only weak relationships between self-report measures of noise sensitivity and objective performance decrements under noise (Zimmer & Ellermeier, 1999).

Specifically, two self-report measures were chosen: the Sensitivity to Noise test (SENSIT) (Santisteban, 1990, 1992) and the State-Trait Anger expression Inventory (STAXI-2) (Spielberger, 1988). SENSIT measures the individual sensitivity toward sounds. Its version A, for youth and adults (SENSIT-NA), was applied. The complete test is composed by two different questionnaires. The first questionnaire (QI) measures psychophysiological traits, and it is used as a control scale of the second one (QII), which measures sensitivity to noise. The STAXI-2 provides relatively brief, objectively scored measures of the experience, expression, and control of anger (Spielberger, 1988; Spielberger, & Syderman, 1994). It has proved useful in normal and abnormal individuals (Deffenbacher, 1992; Moses, 1992), and has also been used to examine relationships of anger with well-being, and stress (Schlosser, 1986), among other studies.

As the main working hypothesis, some individual differences in the relationship between noise and anger were expected: a) subjects highly sensitive to noise would report stronger anger feelings; and b) age and gender would also present some differential effects. Specifically, according to previous literature, older people were expected to have a higher sensitivity to noise (Moreira & Bryan, 1972; Weinstein, 1978; Taylor, 1984; Stansfeld, 1992); and women would also show higher noise sensitivity than men (Nivison & Endresen, 1993). Consequently, it was expected that both (older people and women) would also show stronger anger reaction to it.

MATERIAL AND METHODS

Subjects:

A sample composed by 234 adolescents of both sexes (91 boys and 143 girls) between 15 and 19 years of age, from several high school colleges of Madrid, was tested.

Questionnaires:

Individual sensitivity to noise was measured by SENSIT-NA, which contains two different questionnaires: 1) QI, composed by nine items psychophysiologically oriented; it includes three factors: introversion, hyperactivity and health, and it is used as a control scale of the QII; and 2) QII, with forty seven items environmentally oriented; it is conformed by three subscales relating noise sensitivity to cognitive processes, such as ability for concentration, thinking, reading, working (factor 1); to psychophysiological reactions, such as humour changes, sleeping quality, heart beat (factor 2); and behavioural attraction toward noisy environments, such as turning on radio or TV as noisy background, attending noisy bars or, on the contrary, preference for quiet residential areas (factor 3).

The different dimensions of anger were measured by the STAXI-2, consisting of forty four items, which form five primary scales: State (15 elements), Trait (10 elements), Anger-In, Anger-Out, and Control (these last three, composed by 19 items, were the anger expression scale).

Design and statistical treatment

This descriptive study employed a correlational design that looked for the presence or absence of relationships among the various constructs using the Pearson product moment correlation with an alpha level of .05. Additionally, analysis of variance was used to determine if there were any differences in the constructs (anger and sensitivity to noise) and subject variables (sex and age). Sensitivity to noise was grouped in three according to their intensity (high, medium and low) taking the 25% of the higher and lower puntuations in the scale QII as groups of high and low sensitivity respectively.

RESULTS

I) Before analysing the data obtained applying the mentioned questionnaires, the characteristics of both tests, SENSIT-NA and STAXI-2 were tested on our sample. The reliability, means, standard deviations and ranges for the subscales of SENSIT-NA and STAXI-2 are presented in Table 1. A high reliability (Cronbach´α coefficient) was found for all scales of both tests

INSERT TABLE 1

II) The correlations between the SENSIT-NA and STAXI-2 subscales are presented in Table 2:

INSERT TABLE 2

a) Correlationship between SENSIT-NA and STAXI-2 Anger State was significant ($p < 0.01$) only for the feeling components ($r = 0.26$ for QI, and $r = 0.18$ for Q II), but not for the anger expression.
b) Correlationship between SENSIT-NA and STAXI-2 Anger Trait were statistically significant ($p<0.01$) for both components of trait anger: anger temperament ($r=0.31$and $r=0.21$ for QI y QII respectively); and for anger reaction ($r=0.20$ and $r=0.21$ for QI y QII respectively).
c) Correlationship between SENSIT-NA and STAXI-2 Anger Expression Index were statistically significant ($p<0.01$) with the expression components, and specially to the Internal Expression ($r = 0.27$ for QI, and $r = 0.20$ with Q II), but not to the control ones.
d) The higher correlation values were obtained between trait anger and trait state ($r>=0,43$) and between the trait anger and AEI ($r>0,42$)

III) A multivariate analysis of variance (MANOVA) was conducted to detect the influence of gender, age and individual sensitivity to noise differences on the measures of state anger and trait anger. Following significant effects were found:

a) Individual sensitivity to noise showed a main effect of $F_{2,221}=7,55$ ($p<0.01$). It seems to be due to the scores on anger state as well as anger trait increased concomitantly with sensitivity to noise scores. State anger mean for low sensitivity to noise group is 17,78, being 19,29 for medium level and 21,01 for the high sensitivity level group. The trait anger means were 19.35, 20.33 and 22.65 for high, medium and low sensitivity groups levels. A post hoc Bonferroni test showed statistically significant differences in anger between the high sensitivity to

noise group and the médium level group p=0.019) and also with the low sensitivity group (p<0.001).

b) Age showed a main effect of $F_{1,221}$=4,45 (p=0.036). Young obtained higher scores than adolescents in anger. The anger state means were 18.56 for youngs and 20.17 for adolescents. Less differences were observed between means 20.23 versus 21.31 in Age (adolescents-14/16 years- and young –17/20 years-)

c) Interaction sex x anger showed a main effect of $F_{1,221}$=5,292 (p=0.022). Whereas anger trait level was similar in both sexes, anger state was lower in women than in men (fig. 1).

INSERT FIGURE 1

IV) A second ANOVA was performed to analyze the influence of sex and age on some of the four components of Anger Expression Index (internal control, external control, internal expression, external expression). A significant interaction was found between Anger Expression Index and sex: men obtained higher scores than women in external control [$F_{3,663}$= 3,014 (p=0.029)] (fig. 2).

INSERT FIGURE 2

DISCUSSION

The purpose of this study was to compare the subjective feelings of anger and its expression with the sensitivity to noise. The main conclusions were that noise may act as a stressor causing unwanted aversive changes in an affective state, such as anger; and that these changes are related to several psychobiological characteristics of the subject, such as age, sex, and individual sensitivity to noise.

While average population measures of noise annoyance agree fairly strongly with noise exposure, being associated in a dose-response relationship (Schultz, 1978; Tarnopolsky & Morton Williams, 1980), at any particular noise exposure level there is a wide individual variation in the degree of annoyance and anger felt. Individual factors such as noise sensitivity and attitudes to noise sources account for more variance than plain noise exposure (Job, 1988). Noise sensitivity determines the level of anger. Higher sensitive people may attend and react more readily to noises, perceive increased threat from noises exposure and may have a slower adaptation to noises and pre-existing negative affectivity than people who are less sensitive (Stansfeld, 1992). This observation, as well as another recent one focused to low frequency noise, noting that high-sensitive subjects generally rated a higher value on stress than low-sensitive subjects (Person Waye et al, 2002), support the ‘vulnerability hypothesis’ (Tarnopolsky et al., 1980), according to which noise sorts individuals into annoyance categories according to their vulnerability to stress: at any noise level there may be some individuals who take little notice of it and some who are extremely annoyed by it.

Anger assessment shows individual differences too. The higher individual sensibility to noise, the higher levels of anger in all the three measured aspects. For instance, years ago

Rosenzweig (1976, 1978) differentiated between *impunitive* persons who do not experience anger in anger provoking situations, and *intrapunitive* persons who turn anger in. Some people seem to be chronically angry and hostile but experience little dysfunction because of that anger, whereas others experience high levels of anger, dysfunction, and display problematic behaviors (Reid, 2000). It is further suggested that individuals with a higher trait anger (those who experience anger more frequently) are more likely to express anger than to suppress it, and may feel a higher sensibility to noise just because of their higher tendency to be annoyed, irrespective of the real meaning of the noise. For disturbing noises, the noise-sensitive people may show greater variability in anger under different conditions of noise exposure than less sensitive people, but will remain consistently highly annoyed over long periods of time.

The finding of a higher correlationship between noise sensitivity and anger in the older group (17-20 years) than in the younger ones (14-16 years) matches quite well with previous findings of Miedema and Vos, (1999), collecting data on transportation noise in Europe, North America, and Australia, who also found that age had an effect on annoyance, being this effect on annoyance dependent on the noise level. It may be explained because of their higher degree of maturation: the older ones may be more self-aware of the presence of noise and the need of its avoidance (see also Ramirez, Bonnioc, & Cabanac, in press). And a similar effect was already observed by our group in speech intelligibility tests applied to subjects of the same range of age as in the present study (from 14 to 18 years of age): estimating sensitivity to noise, related to sex, age, and personality traits such as neuroticism, extraversion, and attention, and its effects on the performance, older subjects were more sensible to environmental noise (Turrero et al.,2001).

Comentario [JMR1]:

Men and women experience and express anger in different ways, as the old nursery rhyme claims that little girls are made of "sugar and spice and everything nice," and little boys are made of "slugs and snails and puppy dog tails". Evaluating gender differences in the different anger aspects measured by STAXI, we found that anger state was higher in boys than in girls, whereas on trait and on expression the scores were similar in both sexes. Spielberger et al. (1983), while investigating the validity of the Anger Expression Scale, found that girls reported higher anger expression than boys. Later, however, using the same instrument, Spielberger, Reheiser, & Sydeman (1995), got opposite results: males scored significantly higher than females on trait and on expression of anger, whereas no gender differences were found in state, or control measures. Other studies have reported differences in anger expression (Faber & Burns, 1996), with a higher frequency and intensity of anger in females (Brebner, 2003; Brody et al, 1985), and differences in anger management training needs of police officers (Abernethy & Cox, 1994). And finally many authors failed to find any gender difference in anger expression, using both child (Brody, 1985; Brody, Lovas, & Hay, 1995; Buntain & Costenbader, 1997; Zenman & Shipman, 1996) and adult samples (Averil, 1983; Koper, 1993; Koper & Epperson, 1991, 1996). According to Thomas (1989, 1993) women were more likely to discuss their anger than men, and their trait anger was strongly related to perceived stress.

Although the reasons for these mixed results are unclear, a possible explanation lies in the specific characteristics of the sample population and how these characteristics influence the measurement used (Suter et al. 2002). Some insight is provided through

research using clinical populations, where sex differences have been reported. For example, Funabiki Bologna, Pepping, and FitzGerald (1980) found sex differences in the verbal hostility displayed by depressed patients, while Novaco (1994, cited in O'Neill, 1995 b) found sex differences while collecting normative data for the Novaco Anger Scale, with females scoring higher than males. Sex differences have also been found in the behavioural manifestations of anger. Kelsall, Dolan, and Bailey (1995) reported that females accounted for almost half of the violent incidents reported at an adolescent forensic unit, despite constituting only a third of the population under study. While these results appear counter-intuitive, Kelsall et al. (1995) included self-harm in their measures of violent behaviour, which may be relevant to the gender imbalance of reported violent incidents. Such a finding is supported by a study in which females scores higher on the *indirect expression of anger* (Swaffer & Epps, 1999). These authors hypothesised a link between such scores and self-harming behaviour.

Previous research of our group (Ramirez, Fujihara, van Goozen & Santisteban, 2001; Ramirez, Santisteban, Fujihara & van Goozen, 2002; Van Goozen, Cohen-Kettenis, Sancho, Fujihara, & Ramirez, 1996), administering the Anger Situation Questionnaire (ASQ) (van Goozen et al. 1994) to European and Japanese people, found that even if the feelings of anger experience were higher than the readiness to action in everybody, men seem to have a stronger disposition than females to express their angry feelings in an aggressive way.

How to explain these gender differences in anger, and probably in its relationship to noise sensitivity too? Explanations range from social to biological perspectives. Richardson and Green (1999), for instance, argued that women would be more socially inhibited than men, perhaps, because the likelihood of social sanctions for such behaviour might be higher for females. Gur and Gur (2002), on the contrary, based on the evidence that males have greater brain size than females (even after adjusting for body size) prefer to argue that women's brains are better at handling anger because the part of the brain that modulates aggression is smaller in men than it is in women. Both sexes would have about the same ability to produce emotions, but when it comes to keeping those emotions in check, men have been short-changed. But, if evolution stumbled on a way of making women's brains especially compact, we could wonder why doesn't it make men's brains more compact too? Why on earth would such an advantageous biological innovation be sex-specific?

And, according to the present study, males and females may also be different in their sensitivity to noise: whereas in girls there was a positive correlationship between all the different anger aspects and noise sensitivity, in boys this correlationship was only found between the trait anger and sensitivity to noise. Nivison and Endresen (1993): studying 82 adults (aged 19-78 yrs) who lived beside a street with different levels of traffic, observed a relationship between poor sleep quality and sensitivity only in women, with a stronger relationship among noise sensitivity, health complaints, and poor sleep quality for women than for men. On the contrary, Alvarado et al. (1994), studying the performance of 209 students (aged 14-18 yrs) in very noisy environments, observed that girls were better than boys in attention tasks. A possible evolutionary explanation of the higher sensitivity to noise in women might be considering female sensitivity to noise stemming from the fact that being the child bearer and in charge of 'attending her offspring', she needs to be able to

hear whenever it would be required. This biological reason for being more sensitive to sound might lead to conclude, even if only at a speculative level, that any other sound not related to biological needs would be irritating to her, as she cannot turn off her extra sensitivity.

Finally, even if the SENSIT questionnaire has probed useful as a predictor of anger, it would be of interest to further complement the subjective interactions of anger and noise sensitivity presented in this study, providing external validation and assessing other psychological correlates of anger, such as aggression or impulsiveness, in a setting of meaningful noise with due attention to contextual factors in terms of socio-economical, cultural, and other environmental situations, such as our group has in project to carry. Other psycho-physiological measurements may also be required. For instance, given the association between both noise and anger with cortisol (Persson Waye et al, 2002; Ramirez, in press), it would also be convenient to analyze cortisol levels, as well as the habituation for the effects studied here**.**

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Table 1**. The reliability (Cronbach's α), Means, Standard Deviations and Ranges of SENSIT-NA and STAXI-2.**

	α	Mean	SD	Range
SENSIT-NA				
QI	**0.7029**	**19.1116**	**4.2594**	**11-33**
QII	**0.8973**	**107.9115**	**17.0686**	**65-154**
STAXI-2				
State anger	**0.9055**	**19.2414**	**6.0904**	**15-45**
	0.7739	**20.6696**	**4.6497**	**12-36**
Trait anger	**0.6469**	**22.8899**	**4.6735**	**12-42**
AEI	**0.7994**	**30.9474**	**6.3445**	**12-48**
Expression Control				

Note. Anger Expression Index (AEI) = 36 + (Expression – Control).

Table 2. **Interrelations Among SENSIT-NA subscales (QI and QII) and STAXI-2 subscales (State anger, Trait anger and Anger Expression Index)**

	QI	QII	State anger	Trait anger	AEI
QI	---				
QII	0.6067**	---			
State anger	0.2045**	0.1541*	---		
Trait anger	0.3001**	0.2536**	0.4327**	---	
AEI	0.1913**	0.1400*	0.2849**	0.4228**	---

Note. All tests were two-tailed.

***p<0.05; **p<0.01**

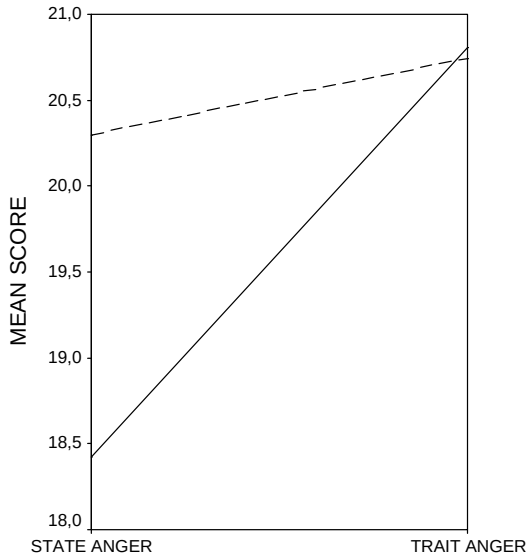

Figure 1. Mean score in anger state and anger trait for male (dash line) and female (solid line).

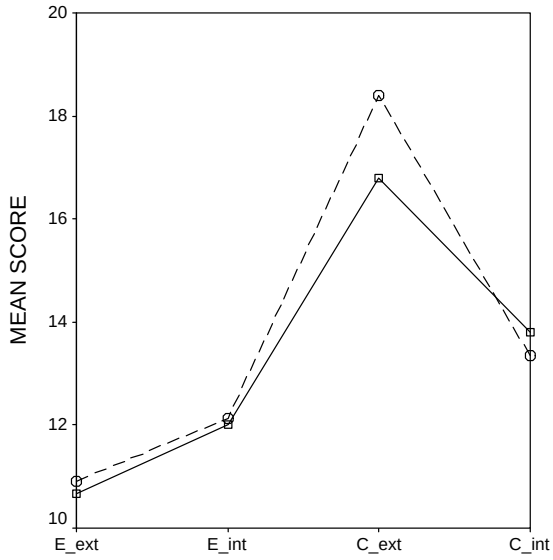

Figure 2. Mean score in external expression, internal expression, external control and internal control for male (dash line) and female (solid line)

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PLEASURE , THE COMMON CURRENCY OF EMOTIONS*

By

J. Martin RAMIREZ & **Michel CABANAC**

The older controversy on whether emotion was independent of cognition,[1,2] or dependent on it,[3,4] has now advanced considerably. The solution fundamentally depends on how one defines both terms, emotion and cognition. Most authors would agree that emotion could be elicited in the absence of conscious cognition mediation. But, if 'cognitive' is taken in a broad sense including basic sensory information processing, virtually all of them agree that some cognitive processing is required for most, if not all, emotions.[5] And even if emotion -at least in its broadest meaning, including feelings, mood, and temperament-, can be elicited with minimal cognitive prerequisites, via non-cognitive routes,[6] the cognitive appraisal is putatively necessary for its elicitation.[7]

Physiologically, there is a two-way interaction between emotion and cognition made possible by the bidirectional connections existent between the main anatomical structures subserving both of them, amygdala and neocortex, respectively,[8,9] and by the distribution of neuropeptides in their brain circuits.[10]

As a follow-up to a definition of sensation as a four-dimensional experience (quality, intensity, hedonicity, and duration),[11] and accepting that sensation is the origin of all consciousness, that model should apply to all forms of mental experience,[12] including emotion, which is just a special case of consciousness: if emotion takes place in consciousness, it should also possess those four dimensions. In fact, Cabanac[13] proposes that *emotion is any mental experience with high intensity and high hedonic content*, expanding on a thesis that motivational states can be compared to each other by a common currency which would be pleasure.

This conception, which facilitates the understanding of emotions, can be reached not only by introspective intuition, but direct evidence of its validity can also be tested by deduction, based on experimental results, such as some ones obtained by our research group describing verbal analysis of the mental experience and the expression of anger in different cultures,[14,15] and the relationship between aggression, impulsiveness and pleasure.[16] We recognize that all those elements possess a strongly hedonic dimension, either positive or negative.

* In Ekman, P., Ed.. *Emotions Inside Out,* Annals of New York Academy of Sciences, in press

Generalizing our findings to other emotions, it may be concluded that pleasure would be the dimension of consciousness that motivates the subject towards useful behaviors. This contention matches with Damasio's[17,18] observation that impairment of emotional process in patients undermines their capacity to make decisions: this is what one would expect to find when the hedonic dimension is severed. The lack of pleasure thus impairs emotion.

Consequently, pleasure/displeasure is the common currency for accessing behavior in response to the various emotions; *no emotion is hedonically indifferent*. The hedonic dimension is what pathonogmonically defines emotion.[13,19] Pleasure thus makes emotion a motivating experience.

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CAN IMPULSIVE AGGRESSION PROVIDE PLEASURE? A Study With People Of Different Ages

J. Martin Ramírez, Marie-Claude Bonniot-Cabanac, & Michel Cabanac

ABSTRACT

We tested the hypothesis that people tend to make aggressive behavioral decisions as a function of the resulting pleasure. Four questionnaires were given to 20 subjects of both sexes 19-80 years of age: Questionnaire 1 (pleasure) described several social interactions followed by a given behavior to be rated hedonically. With each scenario five different behavioral responses with increasing levels of aggressiveness 1 to 5, were presented separately. For questionnaire 2 (decision-making), the subjects had to choose for each scenario one of the five behaviors listed on Questionnaire 1. Questionnaire 3 explored moral attitudes towards aggression. Questionnaire 4 tested impulsiveness.

Results: 1) Mean hedonic ratings increased with aggressiveness ($p < 0.001$). The most pleasurable behaviors ranked second highest in aggressiveness. 2) On Questionnaire 2, subjects selected the most pleasurable behaviors and avoided the most unpleasant ones. Independently of the subjects' choice of behavior, they ranked the most aggressive behaviors significantly more pleasurable than chance ($p<0.03$). 3) Consistency of hedonic ratings with chosen behaviors was negatively correlated with subjects' aggressiveness, cognitive impulsiveness, and positively with age.

Conclusion: it seems that impulsive aggression produces pleasure in the aggressor. The older one is, the more often one chooses pleasurable behaviors.

INTRODUCTION

Changes in our affective mood –positive or negative- occur in various forms, generally in response to important life events, often of clear biological and social significance. Few people escape ups and downs in moods, states of joy and sadness. These changes affect our social interactions and adaptive strategies. Most research has focused on states of negative affect, but there is very little literature on states of positive pleasant affect (Csikszentmihalyi, 1990; deCatanzaro, 1999). This pleasant mood associated with satisfaction is what, for operative reasons, may be called pleasure.

Maximization of pleasure has been shown to be a pre-rational decision-making mechanism by which behavior is optimized. This conclusion was reached from results obtained by Cabanac et al. with sensory pleasure as well as with pleasure aroused by purely mental work, such as when one is playing a video-game or solving grammatical or mathematical problems (Balaskó & Cabanac, 1998b; Cabanac, 1971; Cabanac, Guillaume, Balasko, & Fleury, 2002; Cabanac, Pouliot, & Everett, 1997). In an attempt to probe the hypothesis that pleasure is a major factor of decision making in social situations, the present study analyzed pleasure in relation to interpersonal aggression.

Aggression, in a broader sense, can be considered to be another motivational and emotional phenomenon related to social interaction. Some of our efforts will obviously be more productive than others. Nevertheless, all of us at one time or another have probably found ourselves kicking some obstacle in our path, hitting a vending machine that had just swallowed our last cent without giving anything in return, or shouting insults at someone in our way. These acts, whether productive or not, reflect a desire to right a wrong - or simply to reassert our authority over our environment (Allen & Greenberger, 1980), in one word, a motivation.

Aggression encompasses a wide variety of meanings, including different categories with different functions and antecedents (see, among others: Ramírez, 1998, 2001). For instance, (Mandel, 1959), after observing 9-16 year old boys at a boarding school, listed 2,205 specific aggressive behavior types. Where all aggression is a deliberate attempt to injure someone, a common dichotomy emerged, in terms of purpose or goal (inferred or otherwise) (Feshbach, 1964; Hartup, 1974), between: a) instrumental aggression, chiefly to obtain an object, such as some reward or advantage for the aggressor without anger; and b) hostile aggression, merely to harm the victim, with anger: its primary goal is to hurt. The latter form is also known as impulsive/expressive aggression: actions are carried out involuntarily, in an outburst of rage, in which there is no weighing of costs and benefits, but only a desire to injure or kill.

Many authors have proposed different classifications of human aggression which, even if using different terms, follow consistently the same dichotomy, depending on whether the primary *intent* is distress or harm: on one hand, the '*instrumental-controlled-proactive-coldblooded-offensive-predatory-premeditated*' type; and on the other hand, the '*hostile-impulsive-reactive-hot blooded-defensive-affective-emotional*, relatively involuntary one. Recent studies (Lansford et al., 2002; Poulin, Dishion & Boivin, 2002) suggest that these forms may even be associated with '*positive*' evaluation of aggression (leadership, socialization, reciprocal relationship and friendship with other proactive children, aggressive models…) and with '*negative*' aggression (disruptive behavior, hostile

attribution biases, internalizing problems, such as depression or somatization, and victimation), respectively. Although we are aware that these kinds of classifications may simplify too much human behavior, and that some times it is not explicit when an aggressive action belongs to a specific category.

Being aware that any attempt to sort out the different aggressive systems would at best be tentative, and knowing not only that any tentative classification is merely arbitrary, but also that these proposed taxonomies may simplify too much such a complex behavior like the human one, which in our opinion (Pribram & Ramirez, 1980) is characterized by being global and holistic, and often it displays simultaneously both elements of the dichotomy (Weinshenken & Siegel, 2002), we still think that, far from 'pulling the plug' on this dichotomy, as suggested by Bushman and Anderson (2001), this classification scheme of human aggression is still a useful approach for clarification of those problems, as a key to improve aggression research and the diagnosis and treatment of its abnormalities.

In this study we explored the relations between pleasure and impulsive aggressive actions that are most genuinely aggressive, apparently with no other desire than to hurt. Even if reward may be a typical characteristic of instrumental aggression, this fact does not preclude that it has to be absent in impulsive aggression. Our hypothesis was that people would tend to make behavioral decisions -not only instrumental, but also impulsive ones- as a function of the pleasure they receive from the resulting experience. This was analyzed by asking two main questions. First: can aggression be pleasurable? Because many aggressive behaviors are impulsive in nature, we attempted to answer a second question: is there a relationship between impulsiveness and the tendency to maximize pleasure?

For this purpose, four questionnaires were used:

Questionnaire 1, prepared by us, described seventeen hypothetical scenarios of real life situations leading to anger and aggressive tendencies, selected from sample situations designed and analyzed previously elsewhere (Ramírez, Fujihara, & VanGoozen, 2001; Ramírez, Fujihara, VanGoozen, & Santisteban, 2001; Ramírez, Santisteban, Fujihara, & VanGoozen, 2002; VanGoozen, Cohen-Kettenis, Sancho, Fujihara, & Ramírez, 1996; VanGoozen, Frijda, Kindt, & VanDePoll, 1994; VanGoozen, Frijda, & VanDePoll, 1994). Each scenario ended with a choice of five different behavioral responses to the scenario. Questionnaire 1 measured on the amount of pleasure/displeasure experienced by the subjects from more or less aggressive responses to social stress in everyday life.

Questionnaire 2, presented the seventeen scenarios one after an other, each followed by its five possible responses. The subject was asked to select the one he/she would adopt in real life. The results from this multiple-choice-test Questionnaire

2, were compared to those from Questionnaire 1 and indicated the relationship between hedonic experience and the behavior adopted by the subjects. Similar methods, with Questionnaire 1 followed by Questionnaire 2 have been successfully used previously with grammatical decision making (Balaskó & Cabanac, 1998b), mathematical decision making (Cabanac et al., 2002), with video-game playing, and with enjoyment of poetry (Cabanac et al., 1997).

For Questionnaire 3 (CAMA, which corresponds to the initials, in Spanish, of Questionnaire on Moral Attitudes on Aggression), the subjects were asked whether it would be appropriate to be more or less aggressive in various circumstances. This analysis of personal attitudes toward interpersonal aggression has been previously studied in several contrasting societies: in Finland (Lagerspetz & Westman, 1980; Lagerspetz, Björkqvist, Björkqvist, & Lundman, 1988), Britain (Benton, Kumari, & Brain, 1982), Poland (Fraçzek, 1985; Fraçzek, Ramirez, & Torchalska, 1897), Spain (Andreu, 2001; Ramírez, 1986, 1991, 1993, 1996, 2001), Japan and the U.S.A. (Fujihara, Kohyama, Andreu, & Ramírez, 1999; Ramírez & Fujihara, 1997), Iran (Musazadeh, 1999), and South Africa (Theron, Matthee, Steel, & Ramírez, 2001).

Questionnaire 4 (BIS11, which corresponds to the 11th version of the Barratt Impulsiveness Scale) (Barratt, 1959, 1985, 1994), was used to probe the subjects' impulsiveness. It includes three main impulsiveness subtraits: a) Motor impulsiveness, defined as acting without thinking (ex., "I do things without thinking", "I act on the spur of the moment"); b) Cognitive impulsiveness, making up one's mind quickly (ex., "I have racing thoughts"); and c) Non-planning impulsiveness, characterized as "present orientation" or "lack of "futuring" (ex., "I am more interest in the present than in the future").

A final point we considered was the possible relationship of pleasure and aggression with the age of each subject. Age is still a neglected variable of individual differences in pleasure and aggression research, with only a handful of psychological studies, the possible development of pleasure, impulsiveness, and aggression along our lifespan being also analyzed. The older we become, the more experienced we become, the more mature and hopefully sophisticated we also become, and, consequently, we are expected to be in a better position to select those behaviors and feelings that better fit with our desires. Specifically, we hypothesized that with age people would tend to maximize pleasure, to have more rewarding and pleasant experiences, to use better adaptive strategies, including milder and more sophisticated kinds of aggression, and, at the same time, to decrease cognitive impulsiveness and the more disruptive forms of extreme violence.

METHODS

Subjects

Twenty adult subjects, ten women and ten men, were recruited on campus. The ages extended from 19 to 80 yr. Mean ages were similar for both sexes: 36.5 ± 4.8 yr in women and 36.5 ± 6.2 yr in men. The subjects responded anonymously to all four questionnaires.

Procedures

Hedonicity of aggressiveness

Questionnaire 1 was a list of seventeen short descriptions of unpleasant scenarios from daily ordinary life where other people annoyed the subject. Each of these social scenarios entailed five possible behavioral responses by the subject, from doing nothing and passively accepting the annoyance, to vigorous aggressive reaction towards the people who caused the annoyance, with varying degrees of aggressiveness (See Appendix 1 for an example). Thus, the five possible behavioral responses to each scenario ranged from minimal, through little, medium, and very, up to maximal aggressiveness. Questionnaire 1, therefore, contained 85 items, presenting the seventeen scenarios, each one followed by one of five possible behavioral responses (17 x 5). Care was taken to alternate the degree of aggressiveness in the order of presentation of the items, in order to ensure randomness. After the first seventeen scenarios, the same seventeen set of scenarios was presented again but this time with a second set of behavioral responses. The seventeen scenarios were shown a third time with a third set of behavioral responses, then a fourth time with a fourth set and a fifth time with a fifth set. In order to control for a possible influence from item sequence, Questionnaire 1 was presented in two forms: half of the subjects (five women and five men) received Questionnaire 1a with item 1 to item 85, whereas the other half received Questionnaire 1b with the items presented in reverse order (item 85, to item 1). After reading each unpleasant social scenario followed by its behavioral response, the subjects rated the pleasure/displeasure evoked by it. This rating described the subject's experience on his/her own magnitude estimation scale of her/his own, with anchor at zero=indifferent.

Questionnaire 2 was a multiple-choice type: each of the seventeen unpleasant social scenarios was immediately followed by its five possible responses; the subject marked the behavior she/he would actually adopt. The subjects who had received the reverse sequence of Questionnaire 1b, received also a Questionnaire 2 b with a reversed sequence of the seventeen scenarios. On debriefing, subjects revealed that they had not been influenced by the order of presentation of Questionnaire 1 then 2, as most of them were not even aware that they had selected, in Questionnaire 2, their most enjoyable item in Questionnaire 1. Several subjects declared spontaneously : "I don't know what you are

looking for, but I am sure I have ruined your experiment." We think the reason for such an unawareness is due to the high number of items (85) to be rated in Questionnaire 1. In addition, for reasons of time availability, four subjects answered to Questionnaire 2 one day after having answered Questionnaire 1. As the results in these subjects were not different from the rest of the group, this adds to the evidence that sequence of presentation of questionnaires did not influence the results.

Impulsiveness and aggressiveness

After answering Questionnaire 1 and before being given Questionnaire 2, the sujects received two other questionnaires to test their impulsiveness and their attitudes toward aggression.

Questionnaire 3: Attitudes toward interpersonal aggression were measured with the CAMA test, which contained 48 entries combining eight types of aggressive behavior, of different intensity: 1) a passive aggressive act (hindering); 2-4) verbal aggression (shouting, being ironic, or rage, with a similar degree of approval among the three of them); 5) threat; 6) physical aggression (hitting) ; and 7-8) physical aggression (killing, or torturing, with no significant differences between both) (Ramírez et al., 2001). The subjects were asked to indicate whether these responses would be appropriate in a case of: 1-self-defense, 2-protection of somebody else, 3-severed communication, 4-anger, 5-defense of one's property, and 8-punishment. Subjects thus assessed their personal degree of approval of aggression in particular circumstances.

Questionnaire 4 : The Barratt lmpulsiveness Scale (BIS 11) (Barratt, 1959, 1985, 1994) contained 30 items: 11 items probed non-planning impulsiveness; 10 items probed motor impulsiveness; and 9 items probed cognitive impulsiveness.

Statistical analysis

All results were analyzed with an ANOVA (Statview®). First we analyzed the ratings given by the subjects to Questionnaire 1. Post hoc Student's *t* test were used to compare individual means. Then we tested the consistency between these ratings and the subjects' subsequent behavioral choices from Questionnaire 2. Correlations between individual variables were calculated with simple regressions. Because there were no significative sex differences in the mean responses for any of the four Questionnaires, the results of both sexes were pooled.

RESULTS

Pleasure and aggression

The ranges of pleasure/displeasure ratings for the items on Questionnaire 1 were not very different from subject to subject. Although they received no prior instruction about the rating scale, the subjects all adopted similar rating ranges. The results from Questionnaire 1 are presented, therefore, as means, taking into account that each subject was her/his own control (Fig. 1). Most of the suggested behaviors were rated as unpleasant, the worst being the most passive ones, ranking lowest in terms of aggressiveness intensity. Very aggressive behaviors (ranking 4 in intensity), were rated as significantly pleasant. The most aggressive ones (ranking 5 in intensity) were again rated as unpleasant. The mean ranking of the whole group of subjects for all 17 most aggressive behaviors on Questionnaire 1 shows a slightly, but significantly higher ranking of ratings than chance. The results for each subject were condensed into one single number which was the simple sum of the hedonic ranks for the five intensities of aggressiveness in the 17 scenarios. The ranks were meaned for the group of 20 subjects: 56.30 ± 2.26, to the most aggressive behaviors. The most aggressive behaviors were selected slightly but significantly above chance: 51 (Student's paired *t* test: $t=2.36$, $p=0.03$).

There was also, for each subject, consistency between the pleasure described for the seventeen scenarios presented in 85 combinations on Questionnaire 1 and the behavior selected on Questionnaire 2 (Fig. 2, left): all subjects but one selected more frequently than chance the behaviors that were rated highest out of the five possible responses. Conversely, the number of times when the selected behavior on Questionnaire 2 coincided with the worse ratings for Questionnaire 1 (Fig. 2, right) was below chance. Most subjects, therefore, avoided the behaviors that were unpleasurable. Two subjects however selected repeatedly behaviors they considered to be unpleasurable.

There was a significant negative correlation between consistency in giving the best rating to the chosen behavior on the one hand, and the consistency in giving the worst rating to the avoided behavior on the other hand ($F=33.9$, $r=0.81$, $p<0.001$). This means that the subjects who maximized pleasure were the same as those who minimized discomfort, and the more they sought pleasure, the more they avoided discomfort.

Aggressiveness and Impulsiveness

There was a significant positive correlation between the results of the CAMA agressivity test and the results of BIS 11 test ($F=8.57$, $r=0.57$, $p=0.009$).

Aggressiveness and the trend to maximize pleasure

Comparing the data on pleasure to the aggressiveness profile of each subject, as obtained from CAMA test, an inverse relationship is shown between the degree of acceptance of aggression and the trend to maximize pleasure (Fig. 3, left).

Impulsiveness and the trend to maximize pleasure

There was also a significant inverse relationship between the trend to maximize pleasure when making a choice among several possible behavioral responses and the subjects' cognitive impulsiveness (Fig. 3, right). On the other hand, there was no significant correlation between the trend to maximize pleasure and the subtraits non-planning impulsiveness and motor impulsiveness.

Influence of age

The consistency in choosing behaviors that were rated as pleasurable increased with increasing age of subjects (Fig. 4, left). In other words, older subjects were more likely to select those behaviors that they considered pleasurable. This result was confirmed by the decreasing number of unpleasant behaviors selected: the choice of highly unpleasant behaviors decreased significantly with the subjects' age (Fig. 4, right).

Age was also correlated with the impulsiveness results. Cognitive impulsiveness decreased slightly but significantly with the subjects' age (Fig.5), whereas no correlation was found with non-planning or motor impulsiveness or any other parameter or variable.

DISCUSSION

Texts on motivation (e.g. (deCatanzaro, 1999; Franken, 1988; Maslow, 1970)) typically include discussions of a variety of behaviors because it is thought, for one reason or another, that these behaviors are due to the operation of certain principles of motivation. The study of motivation has traditionally been concerned with the question of what arouses and drives behavior. For example, because arousal can increase the intensity of ongoing emotions or reduce the threshold for such behaviors as aggression, factors that produce arousal, such as pleasure, are of obvious interest to motivation researchers. Both, pleasure and aggression, are deeply rooted in biology and have a long evolutionnary history. Aggressive displays are present throughout practically the entire animal kingdom (Lorenz, 1963), and signs of sensory pleasure have also been described in reptiles (Balaskó & Cabanac, 1998a; Paradis & Cabanac, 2002).

The aim of the present study was to verify whether pleasure might also serve aggression, or vice versa, and whether this interrelationship persists over a life span. The results showed that indeed cognitive impulsiveness and aggressive behavior in response to mild social stress provided pleasure in the subjects. This rewarding facet of moderate aggression –'aggression makes oneself feel better', in words of Bushman, Baumeister, and Phillips (2001)- was also present in impulsive aggression, and not only in the instrumental one.

A correlation between pleasure and behavioral choice may appear obvious. Yet this relationship is neither obvious nor obligatory, as shown by the very fact that no subject selected 100% of the most pleasurable behaviors, that one subject avoided systematically the most pleasurable behaviors, and finally that two subjects selected repeatedly the most unpleasant behaviors. First, a positive correlationship was found between the results of the CAMA and of the BIS tests, used for measuring levels of acceptance of aggression and of impulsiveness, suggesting that the attitudes analyzed by CAMA are related to impulsive aggression. And, second, a positive correlationship existed between pleasure and both impulsiveness and acceptance of aggression; this last correlation was observed only in case of mild aggression, but not when the most aggressive actions, such as killing or torturing, were considered. To experience pleasure during aggressive behavior, thus, does not necessarily imply that subjects have to behave aggressively. Indeed, although the results show that impulsive aggression provides pleasure, the subjects did not select the most aggressive actions. They just clearly chose aggressive but not the most aggressive ones. Undoubtedly, other outcomes, such as moral justification or social acceptance, also entered into their their decisions.

Commonsense says that highly impulsive individuals are generally disadvantaged relative to others: they have a less than optimal strategy, reacting with little thought to the eliciting stimuli without considering the socially defined appropriateness of their reaction (Wicks-Nerlson & Israel, 1997). Obviously, individual differences in this tendency were always present, as expected according to their respective different aggressive personalities (Berkowitz, 1998); but even if some people gave relatively little consideration to the pleasure that the aggressive response might yield, as correctly suggested by an unknown referee, impulsive people also tended to select the most pleasurable aggressive actions, although in a negative relationship to their degree of impulsiveness.

Motivation theorists are fundamentally interested in identifying the motivational process that is assumed to be present whenever some behavior occurs. It has been argued, for example, that the motivational processes underlying the development of any skill are "feelings of efficacy" (White, 1959) or that what motivates us to develop conceptual systems is the "positive affect" associated with the moderate levels of arousal that frequently accompany information processing (Berlyne, 1960). Here, we might say that what motivates us to develop justified aggressive responses would be ‘feelings of pleasure’. Or at least partially, because any given behavior is not necessary governed by a single motive (Cabanac, 1992). Aggression thus is linked to plenty of factors, but it will not occur unless there is some motive for engaging in it.

The preference for aggressive responses may be strengthed not only by external rewards, emphasized in Bandura’s social larning theory (1977, 1986), but also by internal cognitive factors, as suggested in his subsequent formulation under the name of 'social cognitive theory', highlighting the more explicit role of mental structures in guiding action (processes such as imitation, tuition, and feedback from one's own behaviour all guide the self-regulatory mental processes) (Bandura, 1989; Bussey and Bandura, 1999), as well as in Berkowitz’s cognitive-neoassociationistic analysis (1990, 1993, 2000): for instance, the tension reduction resulting from awareness that their antagonist is injured may serve as a reward for provoked aggressors. Feelings thus, and pleasure is one of them, can influence thought, memory, and action. Deepening on this possibility Bushman et al. (2001) tried to proof Geen and Quanty’s catharsis hypothesis (1977): after giving to some subjects a bogus mood-freezing pill that makes affect

regulation efforts ineffective, they found that many people might engage in aggression to improve their own affective state.

All organisms are motivated to maximize their individual and inclusive fitness, by means of a series of mechanisms oriented towards effective solutions in their strugle for survival. We seek food, water, shelter, confort…, and we may also seek gratification or pleasure. In fact, our previous research has shown that pleasure optimizes behavior. Maximization of sensory pleasure produces behaviors that are optimal for survival and reproduction (Cabanac, 1971), and maximization of mental pleasure guides decision-making for video-games (Cabanac et al., 1997), ethics, grammar (Balaskó & Cabanac, 1998b), and mathematics (Cabanac et al., 2002). Pleasure seeking thus seems to be a universal mechanism inherited by humans via natural selection to make prerational decisions.

Ethologists have traditionally viewed aggression as a basically adaptive behavior. Certain behaviors are required if the animal is to survive. The fact that certain behaviors harm other animals is secondary to the survival instinct. There is no intentional motivation to harm the other animal. According to ethologists, aggression evolved in order to ensure the survival not only of the individual but also of the species (Eibl-Eibesfeldt, 1970; Hinde, 1970; Lorenz, 1963; Tinbergen, 1951). If aggressive behavior stops the aggressive behavior of an attacker, for example, it is likely that the tendency to engage in similar aggressive acts will increase (Hokanson & Edelman, 1966). And, if aggressive behavior is adaptive, it should also be rewarding: engaging in aggressive behavior can lead to a reward, to pleasure, which in turn will increase the tendency to be aggressive. It is not surprising thus that people will often react aggressively, because many aggressive acts reflect some pleasure. If we refer to the Schacter-Singer's (1962) theory about emotions [even if they are essentially cognitive, their intensity is linked to physiological responses], and the evolutionary perspective given to optimism by Tiger (1979), it might be suggested that when an individual engages in adaptive behavior, such as justified moderate aggression, a rewarding feeling, such as pleasure, would also be increased.

Humans have been viewed as having certain biological capacities that need to be exercised if they are to experience basic satisfaction with day-to-day existence (Csikszentmihalyi, 1990; Maslow, 1970). It may well be that certain aggressive behaviors represent an attempt to control the environment or to make it predictable. If we are threatened in some way, for example, our immediate reaction could be to regain control. We may tend to retaliate in kind, especially if we have found that this strategy worked in the past. Given that mild aggressiveness elicited by social stress arouses pleasure, such as in the present study, it may be concluded that such aggressive attitudes, experiencing positive affect, may also be, or at least were in our more primitive ancestors, an efficacious and rewarding tool in our social interactions. This conclusion bears no moral content, of course.

The correlation between pleasure and aggressiveness in our study was not linear (Fig.1): a positive correlation existed up to a certain point, but further increments in aggressiveness were even less pleasurable. Why? Probably moral constraints came into play at this point.

Even if it seems quite clear that the roots of human aggression run deep in evolution, the present civilized level of interpersonal relations have produced interesting modulations. Although most aggressive behaviors are retaliation to provocation by others' actions, and some are

considered socially acceptable or even desirable, we are usually conscious that other better, more sophisticated –and more pleasurable- ways exist to solve social problems, achieve goals, and carry out threats than through physical or direct aggression (Ramírez, 1996). This trend is not exclusive to humans; it has also been observed in other animal species; e.g. aggression interferes with cooperation in rats (Schuster, Berger, & Swanson, 1993). The frequency of direct aggression, which includes both overt threats and actual contact, decreases with age: since animals become stronger with increasing age, fighting becomes riskier and consequently is avoided (Alvarez, 1993; Geist, 1971; Schaller, 1977; Walther, 1974). However, when these alternative responses have proven to be ineffective, aggression can be used as 'a last resort.' Then, aggression may serve the intended purpose, being effective and consequently adaptive (Ramírez, 1998, 2001).

Before carrying on with some other comments related to 'cognitive impulsiveness', a caveat about its rather confuse meaning should be done. We used this term following Barratt's (1985) distinction of three main subscales in his BIS batery: motor, cognitive and non-planning impulsiveness. Cognitive or attentional impulsiveness, as it is also known, would mean making quick cognitive decisions, making up one's mind quickly, acting without thinking enough or, at least, with a high speed of thought or cognitive tempo (see the description of each of them in p.6). Whereas motor and non-planning impulsiveness have been easyly and consistently identified in different studies, the cognitive subfactor, on the contrary, was not consistent. Although Gerbing, Ahadi, and Patton (1987) identified it among their 15-factor solution of 373 impulsiveness items and our present results also showed differences among the three subtraits (there was a correlation between and the trend to maximize pleasure and this cognitive factor, but not with the another two subtraits), other studies (Luengo, Carrillo, & Otero, 1991; Patton, Stanford, & Barratt, 1993) have had some problems of replication. This suggests that, far from being cognition a 'pure' component of a specific kind of impulsinevess, as originally hypothesided by Barratt (1985), cognitive or thought processes may be a general trait underlying all kinds of impulsinevess. Results also showed that impulsiveness and non-justified extreme aggression decreased with age.

Our present findings show that age appears to have an influence, maximizing pleasure and, at the same time, decreasing cognitive impulsiveness as well as extreme, disruptive expressions of aggressiveness. This confirms some recent results reported on human aggression: an inverse association between self-reported aggression and age, with lower values at older ages among adults (see (Archer, 2000; O'Connor, Archer, & Wu, 2001)). Explanations range from Quetelet's (Quetelet, 1833) emphasis on declining physical strength (peak of both strength and intermale homicides between 25-30 years of age) and 'passion', to Daly & Wilson's view that young men's aggression represents reproductive competition arising from sexual selection (Daly & Wilson, 1988). However, another explanation might be offered for the above result. If aging were the causal variable for all three correlations, then it would suggest that learning to maximize pleasure also takes place with aging, parallel to maturation. It may also be hypothesized that learning and maturation, i.e., deeper awareness that aggressive behavior provides cognitive pleasure, contributes to the decrease in both aggressiveness and impulsiveness: a more cautious estimate of risk and benefit gradually develops with age. Mischel, Shoda, & Rodriguez (1989) characterized infants as impulse-driven, unable to delay gratification, and suggested that future-oriented self-control develops with maturation Adults thus should show higher cognitive control, leading to suppression of excessive impulsiveness, non-justified aggression and extreme violence, or even immediate pleasure if it is more convenient to wait. At this time, however, it is

not known yet whether all three correlations are dsetermined by aging or whether agressiveness or cognitive impulsiveness are the causal variables.

It would be too simple, and consequently wrong, to conclude that the older we become the less aggressive we are**.** As a matter of fact, the present study has shown (see Fig. 4) that the older the subject, the stronger the trend to maximize pleasure. Given the existence of different kinds of aggression, and based on our present findings on the correlation between pleasure and mild aggressiveness but not between pleasure and extreme aggressiveness, it would be more accurate to conclude that adults, who supposedly have more experience and higher self-control than children, tend to use milder and more sophisticated forms of aggression, which also give them more pleasure. This also explains why the justification of extreme violent acts is quite lower in adults: most people find them utterly repugnant, unethical, unacceptable, and not so easily forgiven by society (Ramírez, 1986, 1991; Ramírez & Fujihara, 1997; Ramírez et al., 2001). Extremely disruptive aggression, therefore, tends to become less frequent with age.

Pleasure is thus a universal mechanism inherited by humans to make prerational decisions (Ramirez & Cabanac, in press).. A parallel position was adopted recently by Mellers: who proposed an account of emotional experiences associated with the outcomes of decisions called "decision affect theory." It incorporates utilities, expectations, and counterfactual comparisons into hedonic responses. That is, people choose the risky options for which they expect to feel better on average (Mellers 2000, Mellers et al. 1997). Because aggressiveness in situations of mild social stress, such as in the present study, arouses pleasure even in impulsive people, it may be concluded that such an attitude was evolutionarily adaptive.

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Figure legends

Fig. 1 Group means (±s.e.) of the individual mean ratings by all 20 subjects to all 85 items of Questionnaire 1. Each column is the mean of 17 x 20 ratings. The difference between two columns is not significant if they share the same symbol (ANOVA).

Fig. 2 **Left**: The ordinate indicates the number of times when the most positive hedonic ratings on Questionnaire 1 were consistent with the choices of items on Questionnaire 2. Each dot represents one subject.

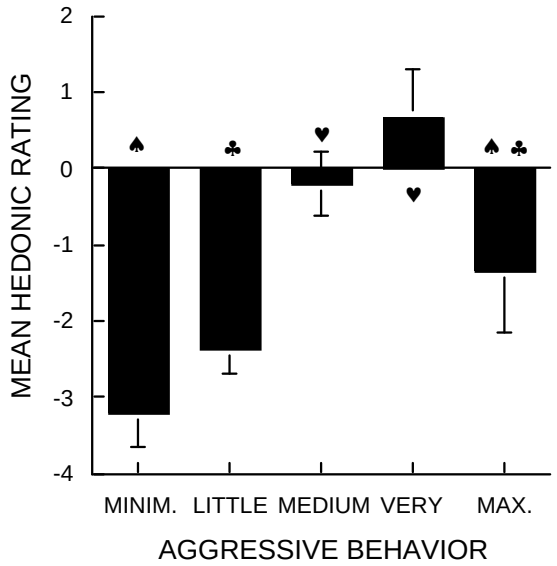
Right: Same as left-hand figure, but for the most negative hedonic rating on Questionnaire 1. Number of times the worst ratings were consistent with the subject's behavioral choices. Each dot represents one subject.

On both sides the dashed line indicates chance behavior (1/5 x 17 = 3.4).

Fig. 3 **Left**: The ordinate indicates the number of times when the most positive hedonic ratings on Questionnaire 1 were consistent with the choices of behaviors on Questionnaire 2. The degree of consistency is plotted against the results from justification of aggression (CAMA, Questionnaire 3): choosing of pleasurable behaviors decreased with subjects' aggressiveness. Each dot represents one subject. R=0.49, p=0.03.
Right: same as left-hand figure, but the consistency of behaviors with most positive hedonic ratings is plotted against the results from the cognitive impulsiveness test (BIS 11, Questionnaire 4): choosing of pleasant behaviors decreased with subjects' cognitive impulsiveness. R=0.61, p=0.004.

Fig. 4 Influence of age on the trend to maximize pleasure. Each dot represents one subject. **Left**: the number of times when the most positive hedonic ratings in Questionnaire 1 were consistent with the choices of behaviors on Questionnaire 2 plotted against subjects' ages: the choosing of pleasurable behaviors rose with subjects' age. R=0.6, p=0.005.
Right: the number of times when the most negative hedonic ratings on Questionnaire 1 were consistent with the choice of behaviors on Questionnaire 2 plotted against subjects' ages: choosing of unpleasurable behaviors decreased with subjects' ages. R=0.51, p=0.02.

Fig. 5 Cognitive Impulsiveness (BIS 11) by age. Each dot represents one subject. Impulsiveness decreased with age. R=0.55, p=0.011.



APPENDIX

(translated from French)

Example of items asked in Questionnaire 1…

14) You are driving and looking for a place to park your car. Finally you find a place, but as you are about to park your, another driver sneeks in and takes it. You step out of your car and tell the other driver to beat it and find another place.

rating:_____

31) You are driving and looking for a place to park your car. Finally you find a place, but as you are about to park your, another driver sneeks in and takes it. You look for another parking place.

rating:_____

48) You are driving and looking for a place to park your car. Finally you find a place, but as you are about to park your, another driver sneeks in and takes it. You wait to check whether the other driver will notice that you were there first and drves away.

rating:_____

65) You are driving and looking for a place to park your car. Finally you find a place, but as you are about to park your, another driver sneeks in and takes it. You honk your horn and wave to the other driver that you intend to park there.

rating:_____

82) You are driving and looking for a place to park your car. Finally you find a place, but as you are about to park your, another driver sneeks in and takes it. You step out of your car and shout to the other driver that you you will not take it lying down if he does not vacate the parking spot.

rating:_____

...And presented in Questionnaire 3

14) You are driving and looking for a place to park your car. Finally you find a place, but as you are about to park your, another driver sneeks in and takes it:

1- You step out of your car and tell the other driver to beat it and find another place.

16. You look for another parking place.
17. You wait to check whether the other driver will notice that you were there first and drves away.
18. You honk your horn and wave to the other driver that you intend to park there.
19. You step out of your car and shout to the other driver that you will not take it lying down if he does not vacate the parking spot.

VI TERRORISM

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PSYCHOLOGICAL PERSPECTIVES ON TERRORISM

Jo Groebel, Jeffrey. Goldstein & J. Martin Ramirez

Terrorism is a world-wide phenomenon which is in the headlines of the international media nearly every week. It is a problem not only jn countries that are at war, but also in nations that are relatively stable democracies, like Spain, Great Britain and West Germany. Although there are many beliefs and opinions about the origins, nature, and characteristics of terrorism, until recently' there has been little systematic research in this area. Of the studies that have been done, several show terrorism to be more complex and with more causes than might at first have been expected. It is the aim of this book to present some of the recent research findings and perspectives that inform our views of the development, the phenomenology, and the consequences of terrorism. Special attention is drawn to the psychological factors involved in the occurrence and consequences of terrorism.

This book arose partly as a result of several meetings at the University of Seville, organized by J. Martin Ramirez. The most recent meeting was devoted exclusively to an examination of the role of the mass in relation to terrorism. Scientists and journalists from Spain and elsewhere met to present their findings and discuss possible consequences of media reports of terrorism. This book presents the international papers plus a few invited chapters. A second volume will cover the papers and discussions of the Spanish scientists. The two volumes can be regarded as complementary to each other.

This volume begins with articles on the psychological and theoretical problems confronting the study of terrorism and the media. Chapters explore the role of the media and examine specific instances of national terrorism, including Basque terrorists in Spain and terrorists in Germany. The psychological consequences for the victims, sometimes neglected in terrorism research, are the topic of a paper which is also based on empirical data. The articles presented here do not necessarily form a *complete* theoretical and empirical program, but instead offer some bases for future consideration. Not least, it is also their intention to stimulate subsequent research in areas where, until recently, empirical analyses were seldom found.

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REFLECTIONS ON TERRORISM AND ITS SEMANTIC: EXAMPLES FROM SPAIN AND SOUTHAFRICA*

J. Martin Ramirez & Christine Lindhard

Terrorism, like any other term, is only the container of a concept or meaning. So what actualy do we meant by terrorism, what do we gain by having a concept of this nature and what are the hidden implications. In a general approach, terrorism refers to the use of violence and intimidation, creating 'terror', i.e. extreme fear, among people. So by implication we must have an 'observer' with a subjective experience classified as terror. A hidden implication is that, given that people prefer to see the world as being diametrically opposite, this 'observer' is the opposite to the other and therefore it implies that the observer considers himself a 'man of peace'. . It is the other that is disturbing this inner state. In most instances, terrorists outside themselves and men of peace inside themselves. Some examples from Spain and Southafrica will be considered. But in reality the world is just not so simplistic. Therefore it might be more useful to consider a continuum with terror on one extreme and peace on the other. A deep anaylsis must first of all consider whether we are 'so peaceful' or do we in fact include a 'bit of the other' which we prefer not to consider as belonging to ourselves. Maybe we should also consider the so called terrorist's point of view as well. Why his view of the world become so desperate that he feels violence is the only solution to his problem. Have we maybe driven him like a wild animal into a corner where he sees no other alternative except by attack? Have we maybe attacked him first is such subtle ways that he feels the we are destoying the very things he holds dear, in fact his whole world? Is that not 'terrorism' in a different form? If we look at some of the mechanisms involved, we know that, from a psychological point of view, we project onto the other parts of our personality that we don't want to own. Do we do this on a social level as well? Does terrorism thus become a convenient term in which we dump all our inner doubts, fears, and negative parts, and then we try to destroy them by projecting these aspects on the other, so having a very convenient excuse to 'make war on them'. We hope this talk may help to expand some of the hidden implications of the term.

* In: The Developmental Origins of Aggressive Behavior, Montreal, 28-31 July 2002, p. 102

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TERRORISM: A PROBLEM OF BORDERS*

J. Martin Ramirez

Terms such as conflict, violence and terrorism are not always sufficiently delineated between one another… 1) Absence of conflict is impossible. Conflicts have always existed in the world and I am afraid they will continue existing, because people in disagreement with one another should coexist… 2) Violence does not have an absolutely negative avaluation either. We still find societies where violence is not valued negatively… Violence, thus, could be a way of settling conflicts, although it is not certainly the more diserable one. Even you still find some people who, basing on hypothetic biological findings, try to justify violence as something inevitable, and thereby acceptable (This has been critized as scientifically incorrect by the Seville Statement on Violence, 1985). 3) Neither conflict equal violence nor does absence of conflict imply absence of violence.

But there is not agreement yet on **what is and is not terrorism** (Ramirez, 1989, 1994). Its definition «is not an easy task», as Carmen Lamarca states (2001), because «besides of making reference to a delinquent act, it is a historical concept with a strong emotive or political charge". As a result it is really difficult to offer a unitarian treatment to something that has been applied to very different realities, according to the peculiarities of each moment and place. This explains its wide variety of definitions found in the literature and why neither the ONU nor the EU have been able to agree on a omnicomprehensive definition of terrorism. The Oxford Dictionary defines terrorism as «use of violence against civilians based on political motives». Pfaff is more precise: «violence against innocents with the aim of obtain some political concessions by force». Ronald Reagan offered a normative [condemnatory] rather than neutral or nonevaluative definition: "the deliberate maiming or killing of innocent people". George Bush Sr.'s Task Force on Combating Terrorism (1979) was too broad: "the unlawful use of threat of violence against persons or property to further political or social objectives", whereas its legal definition of FR Germany seems too restrictive, being limited to one form, f.ex., political terrorism: "the use of criminal acts for political purposes or in such manner as to create political disorder" (see: Khatchadourian, 1998).

All those 'political' definitions miss a psychological perspective on what terrorism is all about. When national leaders repeatedly issue alarms for hyper-vigilance, they ignore all the psychological research about the negative effects of non- specific warnings without any action focus -only making us more paranoid and less mindfully alert. The Dictionary of the Spanish Academy points to this out, when it defines terrorism as "a succesion of acts

* In: *Science, Sustainability Security*, La Jolla, (in press)

of violence, executed with the aim of inducing terror". This is what Zimbardo (2001) says in a more precise way: "Terrorism is the process of inducing fear in the general population by means of acts that undercut an established sense of trust, stability and confidence in one's personal world". Our fear is a realistic emotional response to events that can harm us, and we react to fear by fleeing or fighting it, or freezing in its presence. Fear becomes anxiety when it generalizes beyond the specific danger situation to become a more pervasive feeling of personal vulnerability to things that are not intrinsically dangerous, but are linked symbolically or historically to danger. Anxiety may be triggered by current events that link to unresolved earlier conflicts, to feelings of loss of control, or to childhood states of inadequacy. The actual danger of most terrorist attacks is relatively small compared to on-going dangers in our every day lives, such as accidents, stress-induced heart attacks, obesity-induced diabetes, or disability and death from smoking, as the above mentioned Stanford psychologist pointed out. It is the irrational anxiety that terrorists are able to spread wide and deep that amplifies their impact. Kill someone make everyone feel threatened. Torture and rape a few and make many feel insecure. Destroy a building and have citizens worry that theirs will be next. The **terrorists' omnipresent weapon is exaggerated fear** that spreads into action-crippling anxieties. This is why television and print media should not use the lens of our grand vision, for instance, delivering it repeatedly.

The only thing everybody agrees on the concept of terrorism is that this word seems to be **something ethically condenable, condoned by nobody.** Kidnapping and assesination is unjustiable, morally outrageous, even when done by the most oppressed… The very terrorists try not to describe themselves as such. Even if the idea of a society in loving coexistence is not able to be reached, even if the existence of social conflicts is accepted, even if there are people who occasionally accept violence, nobody dares to justify terrorism. It is taken for granted that it is a scourge, always morally reprehensible and wrong. Consequently, a terrorist will never acknowledge that he is a terrorist. Lets put some examples: 1) Carlos the Jackal, after his capture by the French in 1994, told a journalist that "Above all, I am a family man". 2) Last May, 2002, Pakistan based Muslim rebels killed 31 Indian soldiers' wives and children at an army camp in Kaluchak, in Kashmir. This terrorist outrage, in Indian terms, was described by gen. Musharraf as an attack fighting Indian rule in Kashmir, as part of a "legitimate freedom struggle", a definition that obviously enrages India. 3) In the Koran, the Holy Book of Islam, God commands believers to bring peace and security to the world. Terrorism and all other mischief on Earth are the very acts that Muslims are commanded by God to stand against. "Terrorism is a crime against humanity. It is a brutal attack on innocent people. Islam is a religion that means 'peace'. The Islamic morality is the cure for terrorism, not the source of it. Those who resort to or support terrorism in the name of Islam are in a great error. They are committing a crime which God has cursed in the Koran. All true Muslims denounce terrorism of any kind, and share the sorrows of its victims."

Terrorism, therefore, seems to be antithetical to moral sensibilities of all of us. **Who practice or defend what critics call 'terrorism', refuse to consider it so**, but call it 'freedom fighting', 'martyrdom', 'crusade', or something similar (Haker, 1977). FREEDOM FIGHTING is an umbrella open term, that embraces peaceful (ex., active nonviolent) resistance, and armed struggle for collective freedom, against oppressive domination

(wholly and solely defensive purpose, with no deliberate targeting of civilians and innocent people, and of 'monofocal' character). Since the Koran forbids suicide, radical clerics describe suicide attacks as acts of "self MARTYRDOM." Many Palestinians describe this kind of suicide as an act of courage, as a martyrdom. Bin Laden, in one of his video tapes, asks "Allah (swt) to grant us *shahada* (martyrdom), running towards Him and not away from Him". Like soldiers in battle who sacrifice themselves to protect the lives of their brothers in arms, they may give up their lives at least partly because they know their peer group will respect them for it. In some Islamic schools in the West Bank and Gaza Strip, radical Islamic clerics encourage young people telling them that if they sacrifice themselves in the struggle against Israel, they will reap rich rewards in the afterlife, including the services of 72 beautiful virgins with "complexions like diamonds". When Cheik Ahmed Yassin (Aziz Rantisi), spiritual leader of Hamas, was asked whether it would continue to be more suicides against Israelies, he pinpointed: "Don't call them suicides. There are sacrifices to fight for our land. It is justified as the answer to the killing of so many Palestinian civilians by the Israelies". And the father of one of them later told the newspaper 'USA Today' that he was proud of his son's sacrifice. "He has become a hero. Tell me, what more could a father ask?" The father of another one who suicided herself with a bomb, Ayat Akhras, declared later: «I always thought that my daughter loved other. We always were for life. My daughter will go to heaven». This mentality explains why in the recient Islamic conference celebrated in Kuala Lumpur, 55 of the 57 countries -with the only abstention of the host, Malaysia, and Bosnia, proposed a substancial distinction between terrorism and suicidal bombs. These suicides are sometimes culturally accepted, even encouraged, in the service of a 'higher cause'.

From a strategic prospective, leaving aside any moral judgement, if we may do it, this suicidal terrorism appears perhaps as the only immediate alternative. War is an armed encounter between several relatively balanced armies. But in the present conflict in the Middle East, in the Mashreq, the difference is similar to the one between an elefant and a flea. Whereas Israel has an excellent army, Palestine has nothing but some light weapons. The Israeli occupation of Gaza and the Western Bank shows its most cruel face, with continuous and humillating attacks to indefense Palestinians. «For years we have tried all kinds of methods, wirth infinite pacience», Feisal Husseini said his last evening in Jerusalem, as if he feared what was about to happen. Now his office has been burnt and sacked meanwhile Husseini restsin the Muslem cemetery near the Wall of the Old City, close to the Gate of Lions. This may explain -even if it does not justify it, the indiscriminate reaction of the many 'Martirs of Al Aqsa' to the repeated abuses and repression of the Israelí army trying to kick and bend the Palestinian society.

Similar examples of **semantic confusion** are also found in my own language**. O**ne man's 'terrorists' are another man's 'freedom fighters' or 'guerrilleros', if they are on the left, or *paramilitares* or *escuadras de la muerte*, if at the extreme right. In certain environments, terrorism was presented as a legitimate 'armed fight' caused by «hunger, oppression and corruption», which seemed to justify their assesinations, their robberies, their kidnappings… If someone spatters his kidneys in public -along with some innocent children- one has to indulge him because he must have been 'driven to it by oppression'. Instead of terrorist acts, they were talking about «violent acts»; instead of assesinates they preffer to say 'executions'; instead of hikjackings, they mentioned «illegal arrests»; instead

of urban terrorism, they would talk about «low intensity violence»; and so on. Sumarizing, we tend to define the framework not in relation with the objective situation to study, but according to our own categories and expectancies.

How does that square with a naturalistic ethics? It all depends which of two diametrically opposed, but equally naturalistic, evolutionary views of morality is right. One says that our moral urges promote our genes directly -this idea is usually defended by referring to game theory, the 'prisoners' dilemma', etc. The other view says that morality promotes genes only very indirectly, as an example of self-handicapping (in Geoffrey Miller's The Mating Mind, the most important part of it is attributed to *Zahavi* -- but I am not a psychologist, so my references are probably untrustworthy). For what it's worth, we seem to have very strong commitments to our moral views, yet with a dispute wheter there is a kind of natural law common to all the mankind or very little consensus across cultures (on the biological bases of the moral behavior, see Ramirez, 1986).

This **problem of labelling** creates an unnecessary and inconvenient separateness between humans. When the "insiders" do it, they don't call it "terrorism." That's all there is to it.

For instance, the US dropped bombs on Hiroshima and Nagasaki, killing hundreds of thousands of innocent women and children and old men, in a situation where (a) no enemy soldiers were around to be killed, and (b) the targets had nothing to do with the instigation of war. Yet virtually all American approved of this action (I probably would have, too, if I were on the Allies side and had been old enough to made such judgements). I still can't think of a good argument for opposing 'terrorism' and accepting the bombing of Japanese civilians (and German civilians in Dresden, Afghan civilians in Uruzgan, Palestinian children in Jenin or Gaza, and so on). The French Resistence, dinamiting militar trains and ambushing by surprise, was it terrorist? According to Sharon's criteria, yes; according to De Gaulle's ones, no. Vladimir Putin, tries to discredit the rebel movements in Chekchenia, even if they are convencional armies, accusing them as terrorists. It is the classical distinction between 'us' and 'them'.

Those considerations do not allow us to be pesimistic, though. The human being has progressed along the history. In the beginning, before the family was formed, I imagine almost an absolute chaos in the herds: parents raping their children, practicing magic and cannibalism… Then, with the first forms of justice, the law of talion was accepted: and the victim stop to get ten eyes for each eye lost… although some Palestinians and some Israelies of our days seem to behave as if theye were in the age previous to the talion law. It is a problem that affect millons of people: hopeless, life without meaning. *Autant remporter une ultime victoire en surmontant la peur naturelle de la mort*". But we should not forget what Bernard Russell and Albert Einstein stressed in their Manifesto, ghalf a century ago, and "Remember our humanity!"

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BIOPSYCHOSOCIAL TRAITS OF THE TERRORIST

By

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In the aftermath of September 11, 2001, a consensus quickly emerged that poverty, and lack of education were major causes of terrorist acts. Subscribing to that theory were politicians, journalists, and many scholars, as well as officials responsible for administering aid to poor countries. I am shocked at this broad consensus of an apparently educated elite, given that, far from existing much evidence for the assertion, the relevant scientific literature challenge that consensus, showing huge piles against it. These easy but unscientifical explanations remind me the story of that man who was looking for his lost keys under the streetlight instead of where he had lost them, just because the light was better. Cross-cultural studies assembled by us sho.w too much diversity in the cultural explanations to be admited as obvious causes of the terrorism They lead us to conclude that any connection between these kinds of cultural explanations and terrorism is, at best, indirect, complicated, and probably quite weakIf we want to face its real roots, it seems more profitable to focus on other more universal candidates such as our own human psychobiological nature. The root causes thus have to be search in our own minds. And this is the aim of the present intervention: to present a few observations on characteristic personality traits of the terrorists, in the hope it may be an aid ofshaping a framework of understanding about such individuals, and, ifpossible, shedding light on the murky psychiatric study of the terrorist.

Here, in the middle of the humid hot summer of Quebec, one of my priorities consists in killing mosquitos biting our arms on the hot summer days. This drives to despair to my wife, an extreme avocate of upholding life of all beings, mosquitos included, but I must confess that I do not feel any emotional response nor sense of guilt at all. This leads me to the behavior of those people characterized by the personality type known as "antisocial" personality: that is, those humans who feel no emotional response at harming or killing others

(that is, someone who kills a child with as much feeling as most of us kill a mosquito biting our arm on a hot summer day).

Is this also the case of terrorists? Can they be assimilated in the category of antisocial individuals who feel no emotion in the middle of their terrorist actions? or, do terrorists appear to share several biopsychosocial traits with war heroes -with some important distinctions, though, as some recent observations with suspected AlQaida terrorists may suggest?

Although nobody has yet to my knowledge captured enough of these people to analyze them and get a clear definition of terrorism so we can form some real conclusions about their mental state, let me sumarize a few pivotal observations on the topic revealed by two medical professionals present in Afghanistan during Operation Enduring Freedom.

Both of them were called to duty for other specific reasons: Dr. Ansar Haroun, professor of psychiatry, pediatrics, and law at the University of California San Diego, and a military reservist of the US Army, was sent there to identify and treat combat stress. The 'bread and butter' duty of the second one, Dr. Vicente Navarro, General of the Spanish Army, was to organize the logistic of the military camp hospitals offered by Spain as a help to the rebuilding of the new Afghanistan. But both had the opportunity
to deal with prisoners and suspected terrorists. In their interviews, they probed issues such as their motivations, state of mind, and future potential for violence, including some cultural and political factors.

a.. Biologic issues. No blood test or genetic marker exists to identify a
terrorist. This concept stems from research on sensation seekers who crave arousal and therefore pursue an action-oriented lifestyle through antisocial or prosocial means. One might reasonably postulate, however, that terrorists, like military people, like police, like sportsmen, like people with hyperactivity/ADHD-type disorders, like psychopaths, and like war heroes, are psychologically underaroused.

b.. Intelligence. Terrorists as a group do not tend to be either intelligent or stupid. Just as gang leaders tend to be intelligent and the underlings who do their bidding less so, the planners and organizers of complex plots such as the one unleashed on Sept. 11 are quite smart, but their followers may not be so.

c.. Time orientation. Common criminals are almost exclusively focused on

the present. Medical professionals, on the other hand, tend to be quite future-oriented people, willing to sacrifice immediate pleasure for potential future gains. A good example is a medical student going through years of schooling to obtain a gratifying, rewarding future career. Dr. Haroun found a very interesting phenomenon when he examined the terrorists in Afghanistan: "They were not focused on the present or the future; they seemed to concentrate on the past. [They were] obsessed or preoccupied, but certainly their mental imagery, their wishes, their fantasies and their thinkingwere focused on past glories and past injustices, which give them rationale for some of the bad acts that they committed."

d.. Social thinking. Terrorists are neither entirely self-centered nor possessed of an empathy for mankind that would prevent them from fighting the enemy. It is exactly what the military model of a perfect soldier shows: one who is maximally empathic to their own people but as soon as they cross the border, to have no empathy at all.

e.. Decision-making. Terrorists appear to share with war heroes the ability to correctly estimate risk and the willingness to tolerate risk in the completion of tasks. Both types of individuals differ from common criminals, who frequently underestimate risk, and cowards, who estimate risk correctly but have a low threshold for to it.

With regard to another element of decision making, terrorists meet four elements of rationality set forth in the field of decision science and known by the acronym RATI: they offered insight into the Relevance of their actions, the consideration of Alternatives, a Transitive view of their actions, and a sense that their actions would Increase or promote their self interest. The terrorists were objectively rational in deciding to carry out their acts. When lay persons say terrorists act irrationally, what they generally mean is that they don't like the terrorist's choice of decisions, but not that the terrorit is necessarily irrational.

f.. Aggression and violence. Like freedom fighters and war heroes, they proved to be predatory (calculated, unemotional), rather than affective (personal, passionate) in carrying out violence. People who lose their tempers are useless in terrorist gangs and are useless in the military. Terrorists' tactics of violence appear to have strong expressive (primarily oriented toward the infliction of injury on another individual) rather than instrumental properties (instrumental'aggression is merely a premeditated technique for obtaining a variety of objectives, such as some reward, profit, or advantage for the aggressor). This distinction between instrumental and expressive violence would help us clarify the distinction between the war hero

and the freedom fighter on the one hand and the terrorist on the other.

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THE BASQUE CONFLICT*

J. Martin Ramirez & Bobbie Sullivan

ABSTRACT

Ramirez and Sullivan discuss the past and present situation of the Basque people, whose country lies on both sides of the Spanish-French border. The basis for the Basque cultural identity is examined in terms of its linguistic, religious, racial, and historical aspects. A historical review traces the emergence and reemergence of the issue of Basque autonomy and the related changes in Basque-Spanish relations.

Emphasis is given in this chapter to the role of political and terrorist groups, with particular attention to the ETA, a group known for its violent tactics. The goals and organization of the ETA and other terrorist groups are presented. Ramirez and SuHivan also address changing policy regarding treatment of terrorists and laws concerning their extradition.

With regard to the present situation in the Basque region, Ramirez and Sullivan see autonomy and economic issues as the most pertinent. They explain that most Basques favor some form of autonomy, but differ greatly in their view of the urgency of the situation and the methods that should be used. These differences are the basis for the formation of various Basque political parties.

The authors explain that the economy of the Basque region, once considered a model of industrial success, has greatly deteriorated over the past decade, increasing the frequency of labor disputes with racial overtones. Ramirez and Sullivan express the view that improvement in economic conditions would counter the general instability of the region. Problems of a social nature are also addressed, including the prevalence of terrorist acts and an extremely high rate of drug addiction. Ramirez and Sullivan are of the opinion that the Basques must take a more moderate stand and abandon their separatist goals if they are to reach an understanding with the Spanish government.

INTRODUCTION

This chapter intends to review, in as unbiased a way as possible, the explosive situation in the Basque country and its possible antecedents. Our wish is to facilitate a more thorough awareness of the conditions and dimensions of the actual problems, inasmuch as there is little hope for resolving a problem that is not well understood.

In one sense, the general problems of the Basques are similar to other conflict situations elsewhere around the world. On the surface, the situation in the Basque region seems to have an array of psychological, social, economic, and cultural causes and symptoms common to most other interethnic conflicts. Nevertheless, factors that appear in this way to be generically the same from one situation to another actually do vary, not only in regard to specific character, which is usually peculiar to each country, but also in terms of their relative weight in importance from setting to setting. So, when we speak of the Basque problems, we are often referring to a generic kind of problem, condition, or event, but with

* In: J. Boucher, D. Landis & K. Arnold (eds), *Ethnic conflict: International perspectives,* SAGE, Newbury Park 1987, 119-138

an overlay of characteristics or qualities informed by cultural and historical mechanisms unique to the Basques and their position in the world. Therefore, *idem sed alter*, as the classics would say.

The rugged, heavily forested Basque country, called *Euskadi* by the Basques, straddles the Pyrenees Mountains along part of the Spanish-French border. Historically, two rivers have served as itS borders—the Garona on the north and the Ebro on the south. Today Euskadi is divided in two by the political border between Spain and France. The southern section, inhabited by some 2,100,000, consists of three Spanish provinces: Vizcaya, Guipuzcoa, and Alava. The adjacent province of Navarra, with its half million inhabitants, is also looked upon by some as part of South Euskadi, an issue yet to be settled officially. On the French side of the border are the three Basque Provinces of Bas Navarra, Laburdi, and Zuberoa, collectively known as North Euskadi, or *Iparralde* to the Basques. Administratively included in the French department of the Atlantic Pyrenees, Iparralde is inhabited by about 250,000 Basques. Thus about one-eighth of the Basques are French nationals, while the rest are Spanish.

The geography of the mountainous Basque region has been important in shaping and maintaining the Basque cultural identity. Owing to scanty recorded information, details of the historical origins of the Basques are uncertain, or at best imprecise. Their original forebears were probably Indoeuropeans, descendents of ancient Iberians who managed to keep their identity in their remote valleys. While the Iberian Peninsula has seen wave after wave of invaders over the centuries, the relative inaccessibility of the Basque settlements largely spared them from domination. The Romans, Visigoths, and Moors in turn failed to bring the Basques completely into their spheres of influence. Coupled with tribal values and traditions, this geographical isolation led to a propensity for endogamous marriage. An outcome of this maintenance of a relatively homogeneous gene pool over the generations is that the Basques are distinguished from other Europeans genetically, linguistically, and culturally.

The Basques share a distinct set of biological traits. Although Spanish Basques are usually shorter than French Basques, both groups have a similar body build, elongated facial structure, similar hair and eye coloring, and a high incidence of Rh negative and 0 blood groups. These relatively uniform structural features, combined with their linguistic and cultural characteristics, add up to something akin to racial homogeneity, which unfortunately sometimes carries with it certain racist overtones. While in actuality having nothing to do with supposed superiorities or inferiorities, the fact that the Basques form a relatively distinct biological group is held out by some as a symbol of ‘racial’ independence. Some insiders idealize the Basque ‘race’ as the basis for their supposedly superior moral integrity.

An important reinforcing agent of Basque consciousness and identity is the existence of its own language, called *Euskera*. In the words of the late Basque Premier, Lehendakari Garaikoetxea, the language is “the most intimate trait of the Basque people and testimony to their national identity.” There is no body of original literature written in Euskera, which has always been a rural, colloquial language. The Basque tongue is virtually incomprehensible to speakers of other languages. Certain features of Euskera resemble the Iberian idiom of earlier times, and it has some elements in common with the Caucasian languages. Still, the true origins of Euskera are unknown, and its precise relationship to other modern languages remains in question.

From the sixteenth century onward, Euskera gradually fell into disuse. It is spoken today, in a variety of dialects, as a minority language throughout the region, yet only about 20 percent of Basques know how to speak their language, and barely 12 percent can read

and write it. Since so few Basques know Euskera well enough to use it widely, and since a large proportion of the population in the region today is non-Basque, Castillian is used for everyday conversation. Nevertheless, being able to speak Euskera, or at least to understand it, is regarded by many as a symbol of Basque solidarity. The Basque autonomous government recently has been promoting resurgence in the use of Euskera, and present-day activists favor songs and sayings in Euskera for ceremonies and at political rallies. Caro Baroja, a prestigious Basque anthropologist, warns that this practice carries the danger of further isolating the Basques from the community at large. While the language is often held out as a pillar of Basque uniqueness, clearly setting them apart from "barbarians" who do not speak it, many also understand that a common language does not always insure unity. Language can separate as well as it can unite.

Religion, in the form of devout Catholicism, is an important aspect of Basque cultural identity. Known since time immemorial for a profound religious sentiment, the collective reputation of the Basques as a people of integrity and high principles is undoubtedly rooted in their devoutness. The Church has always been a focal institution in Basque history and tradition, and its role extended to

BASQUE ECONOMIC AND SOCIAL HISTORY

The Basques have always held strong convictions regarding self-sufficiency. The predominantly rural life of the early Basques was built upon a pastoral and agricultural economy, but without the vast property holdings and agrarian feudalism seen elsewhere. Instead, rural populations traditionally were grouped together in *caserios* spread about the mountainsides. These *caserios* consisted of homes for the families, and barns for livestock, around which were orchards and fields worked directly by their owners. Cattle, dairying, beets, and corn were the mainstays. More recently, due to a progressive 'deruralization', the focus has shifted to forestry and lumbering rather than on cultivated fields and grazing meadows.

The sea has figured strongly in the Basque economy. The Basques have a long history as fishermen and whalers, and have also gained a reputation as navigators, having had a role in the discovery and colonization of the Americas and Asia. Their forests provided good hardwoods for shipbuilding, and their skill at this craft was famous. Nearly half of all commercial shipyards in Spain today are Basques, and substantial numbers of Basques continue to make their living as seafarers.

Industrialization came to the Basque region in the late nineteenth century, followed closely by an economic boom bringing real prosperity to the region. Bilbao, traditionally important as a major port, also developed into a large, industrialized city as the nearby iron deposits were exploited.

Industrialization also brought about a large growth in population, particularly in the urban centers. The massive influx of people from other parts of Spain, attracted by the demand for labor, balanced the population deficit caused by the emigration of many indigenous Basques to the Americas. The majority of the present population is not native to the region, and is predominately young (43 percent are younger than 25 years of age).

Today, 70 percent of Guipuzcoa's population live in cities of over 10,000. This province covers only 1.4 percent of Spanish territory; but according to 1970 figures, it was inhabited by 5 percent of the population of Spain and accounted for 9 percent of the total of Spanish production, putting it in first place among the provinces in terms of per capita

income at that time.

The Basque region was hailed as a veritable model of the economic prosperity, brought about in the 1960s with the opening by Franco's government of a more realistic trade and industrial policy. In addition to mining, it was involved in the production of steel, machinery and tools, automobiles, petrochemicals, fertilizers, and so on. The iron mines and related industries, such as the production of heavy machinery and equipment, is still the primary focus of the region. Sadly, the worldwide market for such goods has been depressed in recent years.

The powerful Basque economy has begun to erode over the past decade. The GNP has decreased by 18 points since 1973. It is estimated that two-thirds of Basque business enterprises are presently in financial trouble. The region's unemployment rate of 16.8 percent is not only higher than Spain's national average, but is surpassed only by that of the traditional, underdeveloped regions of the country, such as Andalucia and the Canary Islands. Guipuzcoa has been lowered to ninth place and Vizcaya to fifteenth, in rank among the provinces for per capita income.

This decline is attributed in part to the global economic crisis of recent times and in part to depletion of resources and tough outside competition. Foreign investors have withdrawn capital, discouraging further private investment. There has been an exodus of Basque entrepreneurs, largely due to the civil unrest and the plague of terrorist demands for 'revolutionary taxes'. Labor relations have deteriorated, disputes have cropped up, and some of these have carried racial overtones. Violence has been frequent enough to further disrupt the region's already unsettled sociopolitical climate.

Basque morale has deteriorated along with the economy. The standard of living in the region is in decline, bringing about a mood of pessimism and discouragement. Reactions range from apathy to desperation. Activists, taking advantage of the climate of dissatisfaction, agitate for violent social and political upheaval. The gravity of the present economic situation is high on the list of causes contributing to the continuing political unrest.

Historically throughout the world, violence and economic decline have repeatedly been linked. The linkage often evolves to a vicious cjicle. Poor economic conditions provide a platform for political and social agitation. Such agitation, particularly when it results in violence, disrupts the economy further: Labor disputes and production slowdowns reduce industrial output, resulting in smaller profits, diminished confidence in the marketplace, and, ultimately, the flight of capital. These losses only worsen the economic situation to the point of chaos, thereby strengthening the position of the activists and facilitating their efforts to incite upheaval by radical means. Without substantial, coordinated intervention, such situations continue to disintegrate in a self-reinforcing downward spiral toward catastrophe.

Thus a significant improvement in the economic conditions of the Basque region would go a long way toward relieving the generally unstable situation there. Without some convincing changes to the status quo, it does not seem likely that the Basque region will be able to embark on a successful economic recovery. Industrial diversification away from the present monolithic focus on iron and steel, and technological renewal are desperately needed to restore the Basque economy to its earlier prosperity. This cannot be accomplished without a substantial infusion of new capital. Unfortunately, all of the factors cited above have worked together to create an aura of such uncertainty about the future that there is great reluctance on the part of potential investors to supply the capital so urgently needed. Beyond re-capitalization, additional requirements include greater labor flexibility, better forecasting in order to adjust production capacity to existing market conditions, and development of the

service sector.

BASQUE POLITICAL HISTORY

The early Basques constantly warred with the Visigoths in the South and the Franks to the North. Late in the sixth century they invaded southwest France, pushing their frontier with the Franks to the Garona River. Compelled to swear allegiance to the Frankish king in the mid-seventh century, they were thereafter governed by French dukes and Basque functionaries. The area became a part of the duchy of Aquitania, which was in turn incorporated into the kingdom of France. The Iparralde Basques attempted to become independent, but Charlemagne obliged them to lay down their arms and integrate permanently with France. They did so, and they remain under French sovereignty today.

The southern Basques had frequent encounters with Castilla and Navarra throughout the Middle Ages. This led to their being incorporated under the crown of Castilla by late in the fourteenth century. The Basques insisted that the terms of their incorporation into the Castillian kingdom be set forth as a pact between equals, acknowledging their right to autonomy and affirming the legitimacy of the *Fueros—the* ancient Basque laws. Accordingly, the Castillian king, or his representative, met once every two years in Guernica with an assembly of Basque men. In a ceremony that traditionally took place under a certain oak tree, the king swore to respect the Fueros in return for Basque allegiance. Maintained until the nineteenth century, this pact guaranteed the continuance of the Fueros and the Basque identity.

Early in the 19th century, the 'Basque problem' reappeared. During the Carlist Wars (1833-36), the power of the liberals favoring Queen Isabel II was rooted in the support of the urban bourgeoisie. The support of the rural population, including most Basques, went to the conservatives who favored Isabel's brother, Cabs. Most of the battles actually took place in Basque territory. When the Carlists were defeated, the Basques themselves felt defeated, and an army of "foreign invaders" occupied their territory.

Angry at having their autonomy curtailed by the ruling Isabelists, a new Basque consciousness began to emerge. Grounded on conservative Carlist ideals and traditional Basque values, a renewed sense of collective identity and consciousness surfaced, consolidating to the point of a nationalist movement by the close of the nineteenth century.

Industrialization of the region was proceeding rapidly, centering on development of the mining and steel industries. The working class grew in size as immigrants seeking jobs poured in from other regions of Spain. Along with the mines, mills, and immigrants, the incipient socialist workers' movement also arrived, somewhat displacing the Basque nationalist movement as the focus of political attention. Frequent confrontations between the Basques and the socialists ensued.

In 1894, Sabino de Arana, son of a Carlist shipowner, founded the Basque Nationalist Party (PNV) under the motto "For God and for Our Ancient Laws," with the aim of achieving independence for Euskadi. He and his mostly middle-class separatist followers envisioned a state based on "the fundamental links that unite the Basques," namely, the Catholic religion and 'the race'.

In 1898, certain Vizcaya bourgeoisie with a conservative political stance formed a combined group with PNV. They enjoyed popular support, but had little practical power. In 1931, the PNV proclaimed that they would not oppose the Second Spanish Republic so long

as the Basques were allowed to govern themselves. The PNV and the Carlists joined in an active right-wing coalition, obtaining some administrative autonomy and grants of fiscal concessions. Discussions concerning a Basque state were initiated, but the idea was rejected by the Assembly of Councils of Navarra on June 19, 1932.

The PNV ran alone in the December 1933 elections. Right-wing parties triumphed throughout Spain, subsequently staying in power until February 1936. The Basques saw certain new laws during this period as threatening to economic concessions they had gained earlier. This perceived threat, coupled with a general disillusionment with the Spanish right wing, led to a rekindling of agitation for Basque autonomy.

In search of new patrons for their cause after falling out with the Spanish right wing, Basque activists approached socialists and other leftists. In their fervor to gain support for statutory autonomy, the traditionally conservative, religious Basques joined in what has come to be viewed as an irrational alliance with the Popular Front, the revolutionary Spanish left.

In 1936, at the outset of the Spanish Civil War, Alava province joined the rebellion on the side of Franco. Meanwhile, Vizcaya and Guipuzcoa led in a general voluntary mobilization on the Republic side, hoping to insure the continuity of the middle-class social order. On October 7, 1936, a Basque Statute was signed forming a Basque government. On June 19, 1937, however, the experiment of the Republic of Euskadi was terminated when Bilbao fell to Franco's army. While Alava and Navarra were allowed to retain fiscal and administrative autonomy in reward for their alliance with Franco, it was decreed that Vizcaya and Guipuzcoa would be subject to the same standards as the rest of Spain, thus removing the last vestiges of their autonomy.

Most defeated PNV militants went into exile, emigrating mainly to Latin America where many became quite influential. But in the 1950s exiled militants regrouped, joined with new recruits, and reorganized the PNV. Then in 1959 one group separated itself from the PNV, adopting the name *Euskadi eta Askatasuna* (Fatherland and Freedom; ETA).

The appearance of ETA sparked a revival of Basque nationalism in Spain during the 1960s. Formation of an independent Basque State to embrace the present French and Spanish Basque provinces, plus Navarra, has been the main goal of ETA. They proposed political, economic, and armed struggle as means for attaining this end. A great number of Marxists, Maoists, and Trotskyites were attracted to ETA by its promise of Basque social liberation through armed conflict. Their priorities turned out to be somewhat different than those of ETA, however, resulting in the first fissures in the organization around 1965. The newcomers left ETA to join other leftist organizations.

ETA is largely youthful, made up primarily of workers, students, and seminarians. Their methods include kidnapping and the demanding of so-called 'revolutionary taxes' and other extortions on threat of death. A 'settling of accounts' among members, reminiscent of the *vendetta,* is a part of their code, which also features *omerta* or the 'complicity of silence'.

Initially, ETA was organized around several fronts: military, political, cultural, and worker. In the mid-1970s, ETA split into two branches: the *mili* and the *poli-mili*. This seemed to result from disparities in prestige among the fronts in the aftermath of terrorism carried out by the more extremist elements in the military front, especially following the 1973 assassination of the president of the Spanish government, Admiral Carrero. The military front of ETA (the *milis*) gained prestige in certain circles, with a consequent

reduction in the prestige of the other ETA fronts. Thereafter, the *milis* saw the other three as hindering the progress of ETA.

The *poli-milis* objected to the creation of a popular army without prior and intense mass action, a point of contention with the *milis*. In essence, the *milis* were promulgating the ideas learned through the French experience of May 1968 and subsequently adopted by the Red Brigades in Italy. The strategy was to avoid any sympathizer not in favor of armed violence. They envisioned mass actions carried out by independent organizations but under the control and direction of ETA militants.

A variety of events led the *milis* to form *Herri Batasuna* (Popular Unity; HB), a political coalition gathered around the HASI (Social Revolutionary Basque Party) over which they maintain iron-fisted control. HB, backed by about 10 percent of the Basque electorate, has about 50 activists directly involved in terrorist activities, according to police estimates.

The *poli-mili* branch has a more limited operative capacity, in part because they are fewer in number and in part because police has subjected the organization more frequently to deportations and to shutdowns. Nevertheless, their actions are well noticed and have a major political echo: bombing tourist facilities, airports, and railway stations; kidnapping diplomats and political figures; and selective assassinations.

Politically, the *poli-milis* were integrated into the EE *(Euskadiko Ezquerra,* or Basque left), a coalition for which mass action takes precedence over armed combat. The EE adds socialism to nationalism and enjoys the support of about 5 percent of the electorate.

In 1981, the Spanish government offered amnesty to ETA members not guilty of blood crimes who would abandon the notion of armed struggle. About 250 *etarras* of the seventh *poli-mili* assembly accepted the offer. The assembly dissolved itself on September 30, 1982, acknowledging that the sociopolitical conditions of years past had now changed. Given present-day conditions, they concluded that use of the democratic process would be a better strategy than taking up arms for defending the rights of their people.

The French-Spanish Convention of 1887 and the Law of 1927 strictly prohibit extraditions of political detainees between the two countries. This may explain why the French government allowed its territory to be used with impunity by the etarras for a long while as a sanctuary and as a staging area for attacks launched against Spanish territory. However, the French view of the ETA's activities seems to have changed, as suggested by more recent events. On several occasions, beginning in 1984, France agreed to extradite etarras to Spain. The French have deported some ETA members to South America and Africa, and have resettled others in French Provinces far more distant from the Spanish border. These measures have been interpreted as an acknowledgment by the French of the essentially criminal nature of the activities of the *etarras*. According to minutes of the French *Conseil d'Etat*, the extraditions had to do with "infractions of common law which cannot be considered of a political character or linked to a political crime." French Prime Minister Fabius added: "the end does not justify the means, and France is not a sanctuary for those who commit such crimes of violence" (September 26, 1984). These events necessitated a change in ETA strategy to either of two alternatives: transferring to locations inside the Spanish border, thus risking severe repression by the police; or installing itself in some geographically more distant country, thus reducing its operative capacity.

In sum, despite recurring internal problems, ETA has demonstrated staying power and relative consistency in regard to ideology and strategy. Its ideology is one of non-

negotiable radical independence. Its strategy of violence is directed not at any particular form of government but rather against the national unity of Spain. Its opposition to national unity explains why its armed fight against the Spanish democracy continues even today.

Several other radical organizations operate in the Basque region alongside, or in opposition to, ETA. *lparretarra**k*** might be described as the French version of ETA. However, compared with the Spanish ETA, it is less hostile. The CCAA (Autonomous Anti-capitalistic Commands) has some ties with the ETA *mili*, but their ideology puts them more correctly in the international proletarian movement rather than with the Basque separatist movement per se. Weaker than ETA, with far fewer resources and less operative capacity, they espouse an ideologically based view of elections as "dangerous" and they customarily attempt to interfere at polling places. They are a potentially destabilizing force, given that the terrorism they do engage in is carried out indiscriminately.

The GAL (Antiterrorist Groups of Liberation) made themselves known in 1983 with the kidnapping of a Spanish Basque residing in France, freeing him 10 days later. This group is in opposition to ETA, but has never operated on Spanish territory. Instead it directs its actions against ETA members and other Basques in France, using ETA's own methods. At least a dozen assassinations have been attributed to GAL, all of them reprisals against ETA. Theirs is a counter-terrorist tactic: They launch their reprisals in immediate response to terrorism by ETA. Some who mount these counter-terrorist attacks are believed to be mercenaries. Others are thought to be connected with extremists of the French right. In some quarters it is claimed that the GAL are connected to the Spanish police. For all the speculation, however, it is not known who actually controls this group.

Today, there are five active political parties in the Basque region. One is a coalition of the non-nationalist right, with about 10 percent of the vote. Largely representing the immigrant workforce, and of great historical importance, is the socialist party (PSOE), which carries 25 percent of the vote. Both of these parties are active in other areas of Spain as well. In addition are the three Basque nationalist parties—the EE, HB, and the PNV. The EE and the HB are two small leftist parties that carry between them about 10 percent of the vote; the PNV, with its conservative stance, appeals to traditionalist Basques and enjoys the favor of nearly half the electorate in the region.

Given its relative majority, the PNV has been in virtual control of the Basque region since the beginning of autonomy in 1979. Within the PNV are two different approaches to nationalism, each equally influential relative to the other. On the one hand is the 'foralist' approach, best described as Christian-democratic. Citing historical reasons for maintaining decentralized control in the various provinces or 'historical territories', they argue that the Basque region never has been a territorial entity with a central government. This historically based point of view reflects a basic tenet of traditional Basque nationalism: To change historical traditions is dangerous for the continuity of the Basque identity. The 'technocrats', on the other hand, espouse a social-democratic approach. They favor greater centralized power and are advocates for a strong executive in the Basque country. The power struggle between the proponents of these two positions was made evident as the Basque Parliament met to consider the project of an internal constitution for the Basque country. The Law for the Historical Territories, a *foralist* formulation, was presented on March 19, 1981. The dispute culminated in December 1984 with the dismissal of the Basque Premier, Lehendakari Garaikoetxea, a partisan of the technocrats, and the nomination of Ardanza, a *foralist*.

Euskadiko Ezquerra (Basque Left for Socialism), or the EE, has as its goal an independent Basque country, arguing that "Euskal Herria is a country, and as such it has the nonnegotiable right to be a self-governing nation." Its ideology is Marxist, appealing to the working class. EE sets itself forth as an alternative to socialism, favoring a "struggle for national liberation" by means of action among the working class instead of the armed action promulgated by the ETA *mili*. Considered a separatist version of the communists, its stance is close to certain positions of the former *poli-mili*.

A coalition was formed in April 1978 by "all Basque political parties of the left whose strategy for the liberation of Euskadi and the installation of socialism is established within the frame of Basque nationalism." This is *Herri* ***Batasuna*** (Popular Unity), or HB, a coalition of five parties: (1) HASI (Popular Socialist Revolutionary Party), a Marxist group evolving from ETA, founded and run by Santiago Brouard until his assassination in September 1984; (2) LAIA (Revolutionary Party of Basque Workers); (3) National Basque Action, a group that split from the PNV at the beginning of this century; (4) ESB (Basque Socialist Convergence); and (5) Popular Organization, a group promoting amnesty, antinuclear committees, and so on. In 1980, LAIA and ESB left the HB coalition. The latter eventually ceased to exist as an entity.

The coalition represents about 10 percent of the Basque population, including those who, in other regions, would vote for the parties of the extreme left. HB is viewed as the political arm of the ETA *mili* to which it offers protection. Members recognize neither the Spanish constitution nor the Basque Statutes. Consequently, they do not participate in institutions of the establishment nor do they occupy parliamentary seats. The aims of HB are encompassed by a five-point program: (1) amnesty —liberation of all Basque prisoners; (2) democratic liberties —legalization of all Basque political parties, including independent ones; (3) expulsion of state security forces (i.e., police and civil guard) from the Basque region; (4) integration of Navarra into the Basque country; (5) an autonomy statute recognizing the national sovereignty of the Basques, their right to self-determination, and their right to create an independent state (with ties to French Euskadi), with armed forces under the sole control of the Basque government.

A new Spanish constitution was brought forth in 1978, after Franco's death, and in 1979 all of the Basque parties except HB signed a new statute of autonomy known as the Statute of Guernica. It was hoped that this would serve as a panacea for the unrest that had plagued the Basque country for so long. Lehendakari Garaikoetxea referred to it as a 'formula for peace and concordance'; instead it became a point of discord. Each faction seems to have interpreted the statute in its own way, to serve its own needs. Th Spanish parties see it as an adequate framework for coexistence with the Basques; the PNV, EE, and others consider it to be merely a starting point, a 'statute of minimums' as it were, which should lead to further negotiations; still others —namely, ETA and He— look upon it as just so much wasted paper.

Most Basques favor some form of autonomy, and the parties exhibiting considerable solidarity in their feelings of belonging to common Basque nation, all have some form of autonomy as the goal toward which they strive. While the Spanish parties tend to be partisans of centralization or of a limited autonomy, the Basque parties defend either a more complete autonomy or the establishment of an independent Basque State, to include Navarra and Iparralde. Some, such as the PNV and the EE, trust that the movement will gradually mature and that the goals will be realized little by little. HB, ETA, and other radicals wish to pursue independence immediately, by means of armed combat if necessary. Thus the parties disagree not so much in their principal objective as in the urgency and methods for realizing that objective. This results in alternations between pragmatic moderation and a tendency to

negotiate, on the one side, and a rigid, extremist intransigence on the other, affecting not only the setting of objectives but also the strategies and methods for attaining them.

THE PRESENT SITUATION IN THE BASQUE REGION

The situation in the Basque country today is confused and anything but tranquil. The serious economic deterioration is reflected in a mood of discouragement and impotence and in the presence of social problems such as depersonalization and the weakening of the family, which often accompany industrialization and economic crisis. Such problems are not unique to the Basque region nor do they arise from one source, although there is a tendency among the Basque to place the blame for these things on the Spanish State.

The permanent state of tension between the pro-Basque activists and the officials of the Spanish State frequently erupts in violence, infusing the atmosphere with fear. Terrorism began to hit the newspaper headlines with greater frequency in the mid-1970s. The number of assassinations, beginning with that of a police inspector in 1968, has now surpassed 600. Included among the victims are 50 high-level military officials, all killed since democracy was reinstated in 1977. The Spanish Ministry of the Interior reports that 156 terrorists have been killed during the same period —75 in the Basque region of Spain, 21 in France, and the rest elsewhere.

Public opinion regarding what should be done to resolve the situation varies widely. Some take extreme positions on the issue, advocating severe punishments for captured terrorists. Regardless of what punishment is imposed, many think the authorities should be absolutely unrelenting in their pursuit of the terrorists until they are eliminated completely. Others sympathize with the terrorists, offering them at least passive support, and sometimes providing them with help in the way of food and lodging.

This attitude of sympathy for ETA is understandable to some extent: The ETA ideology of independence for the region is appealing to the Basques who resent the power wielded over them by the central government and who blame Madrid for the economic ruin and social decay in their region. Many Basques may feel that the strategies and tactics of ETA are ill advised and even wrong. Nevertheless, they also tend to believe that ETA wants to make a ‘better world’, based on their own ideals and traditions. Madrid seems determined to dissuade them by means of systematic persecution, exemplified by recent jailing of nearly half a thousand HB militants and ETA sympathizers. Thus the Basques exist in a subjective atmosphere of repression.

It must be said that the central government is not exempt from blame for its lack of tact in dealing with the local people or for the apparent failure of its chaotic police system in combating terrorism. Often given to excess, methods for dealing with captured terrorists have included physical and psychological torture, confirmed by a report of Amnesty International (1984). Given the nature of the terrorists’ methods, it would be nothing short of miraculous if the police were not at times moved to severe methods in return, including those which infringe on ordinary rules of respect for human rights. Perhaps, in this light, an understanding of the excesses committed by the Spanish state through its police may be possible; still, torture in any form is never justifiable, and such behavior remains reprehensible. It only serves to further alienate the people, damaging the image of the Civil Government and ultimately being counterproductive.

Historically, many Basques have looked upon the Spaniards who live in their region as ‘foreigners’. The presence of so many non-native people in their midst makes them feel

invaded and occupied by outsiders. Some Basques, fortunately a minority, seem unable to view the Spanish police as normal, human individuals. Instead they are seen as a group caricature: aliens armed with helmets and visors, riding in armored vehicles, ready for action. This view, if not wholly justified, is at least somewhat understandable given that so many interactions between the police and the local people occur in the midst of some unpleasantness. In their own right, many of the police, having joined the ranks simply for economic reasons, do not have a very pleasant existence. Posted in a region culturally quite different from their own, and not daring to have their families accompany them for fear of reprisals, they live an almost monastic life. They leave their barracks only in groups to exercise their official duties, such as putting down demonstrations.

A drug abuse problem of phenomenal proportions is another serious and pervasive social problem in the Basque region, particularly among its disaffected youth. The statistics are startling. The Basque region reportedly has the highest drug addiction rate in Europe; the town of San Sebastian has the highest rate of heroin consumption per capita in the world. Over 11,000 young people are heroin addicts. Up to 17 percent of those aged 13 to 17 reportedly smoke marijuana; and even in this age group, 0.5 percent are addicted to heroin. The problem is pervasive across the sociopolitical spectrum.

The various factions, far from working together to alleviate the drug problem, seem instead to be aggravating it, promoting drug use directly or indirectly for their own reasons. The Basque bishops, in a pastoral letter dated September 20, 1984, accused the terrorists of trafficking in drugs as means of getting funds to purchase weapons, and accused the police of providing drugs to informers in order to get them to cooperate. This problem, perhaps more than any other, is symptomatic of the extent to which the moral order and social stability of the Basque region have broken down and is an example of the social repercussions that have been felt acutely and widely throughout the Basque region.

Given their turbulent and stubborn spirit, Basques have always lived by continuously turning their backs on one another. The community is essentially divided into two sides, always in confrontation. Common phenomena in the Basque nationalist movement, therefore, are frequent schisms, lack of coordination between factions, and dispersion of resources. This does not change much over time, as evidenced by the recent desperate complaint of a politician who said: “We Basques do not agree on a thing!” Apparently, in fact, they do not even agree on the model of society and state that they want, as the recent PNV crisis has shown.

Another characteristic, the ‘irrational factor’, is present throughout Basque history. During the Carlist wars in the 19th century, irrationality took the form of absolutism, racism, and separatism. This was followed by the irrational alliance between right-wing Basques and the leftist Popular Front during the Spanish Civil War. At present is the irrationality of terrorism that is literally demolishing the economy of the Basque region. This irrational component is important for understanding the present Basque problem.

If separatism is wrongly based on dogmatic claims that all central power is useless, then centralism may breed another no less grave mistake in confusing centralism with patriotism. Castilla, the core of Spanish unity, has not asked other regions for help in its task of unifying the country “as if only Castillian heads would have adequate organs for perceiving and resolving the great problem of the Integral Spain,” as Ortega says in his *Invertebrate Spain.* Therefore, even though the Basque country has a privileged situation in that it is economically more developed than other regions, its subjective feeling of ‘oppression’ by the Spanish government is understandable. The Castillians and the Basques look differently upon the region. Consequently, Madrid’s ministrations are perceived

differently by each side, resulting in a kind of background incompatibility.

Madrid's ignorance of the problems and idiosyncrasies of Basque culture leads to oversimplifications, unnecessarily irritating the Basques further. Major mistakes made out of ignorance can have far-reaching negative effects, easily fomenting feelings of discontent and oppression. An interesting question is why Basque nationalism was not born in rural Ipparalde but in industrial Vizcaya, where Euskera was hardly spoken. Several reasons come to mind that may help to explain this. First, France has allowed external signs of 'Basqueness' to be expressed, such as folklore and customs. Consequently, Basques in France had no repression to fight against. More important is the French policy of promoting agriculture and tourism rather than industry in French Basque territory; it is in urban industrial environments where radical political notions seem to germinate. Finally, nationalism finds more sympathy and support when fought against a totalitarian regime such as Franco's rather than a democracy like the French Republic.

Rational agreement with Madrid will not be attainable while the separatists persist. Some of their conditions are completely unacceptable, and they well know it. Both sides must admit at the outset that the Basque region has no possible future as an independent state. Successful negotiation requires moderation on both sides and a willingness to at least consider rational compromise. Autonomous spheres are permitted by the Spanish constitution, so long as they do not destabilize Spain. Using the Statute of Guernica as a negotiating frame, the Basques could conceivably obtain a condition of inclusion in the Spanish State based on terms satisfactory to all parties. Some present-day Basques, mostly those who live in rural areas, hold to traditional notions of nationalism, resisting all outside influence and defending their language, customs, and ancient laws. Other Basques, especially those who live in urban centers, are rather more interested in problems of the economy and of class, whether from a Marxist, conservative, liberal, or even independent point of view. The point is that they are all Basques; their main hope is to integrate, respect one another, and cooperate. There is no culturally and ethnically monolithic Basque society as some nationalists myopically pretend; rather, the region is peopled by a plural and polymorphous society in which different cultures and interests must coexist. Such recognition can be a starting point fur rectifying old mistakes, ultimately improving prospects for coexistence, and, as Ortega said, "living in harmony as part of an all and not all apart."

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TERRORISM IN SPAIN: THE CASE OF E.T.A.*

J. Martín Ramírez

The general problems of terrorism are similar everywhere in the world. They seem to have an array of psychological, social, economic and cultural causes, symptoms and consequences in common. Nevertheless, the factors that appear to be generically the same actually do vary from one particular situation to another. Differences exist not only in regard to the specific character of their significant factors, but also in terms of their relative weight of importance from setting to setting. Therefore, *eadem sed aliter*, as the classics would say. That is why it may be worthwhilr to offer a brief review, in a rather aseptic way, i.e., as free of interpretations as possible, of the past and present situation of a clandestine Basque organization, known for its violent tactics and responsable for most of the terroristic acts in Spain during the last two decades: E.T.A. (For a discussion of the Basque conflict within a broader context of the country and culture of the Basque people, see Ramirez, J.M. & Sullivan, B., The Basque conflict, In J. Boucher, D. Landis & K.A. Clark, *Ethnic Conflict. International Perspectives,* SAGE, Newbury Park 1987, pp 119-139, among others).

In 1894 a nationalistic party with the aim of achieving independence for Euskadi was founded in Bilbao, the PNV. On October 7, 1936, at the outset of the Spanish Civil War, a Basque Statute was signed and the experiment of an autonomous Republic of Euskadi started under the rule of PNV until it fell to Franco's army, on June 19, 1937. Most defeated militants went into exile and, in the 50s, regrouped, joined with new recruits, and reorganized the party.

A group of nationalist youth, with a liberal Catholic ideology, become gradually more unhappy with the passivity of the PNV and the lack of efficiency of its policy. Finally they separated themselves from the party in 1958 and, on July 31, 1959, adopting the name of *Euskadi ta Askatasuna,* i.e., Fatherland and Freedom, E.T.A. was founded. E.T.A. defines

* In: J. Groebel & J. Goldstein (eds), *Terrorism*, Publicaciones Universidad de Sevilla, Sevilla 1989, 153-161

itself as "a Basque revolutionary socialistic organization of national liberation". Of nationalistic and socialist ideology, its main goal would be the formation of an independent Basque State to embrace the present French and Spanish Basque provinces, comprising Navarra. Three years later, in 1962, during their first Assembly they declared themselves an "aconfessional" group.

The appearance of ETA sparked a revival of Basque nationalism in Spain during the 60s. It is largely youthful, made up primarily of workers, students, and seminarians. They proposed political, economic, and armed struggle as means for attaining their goal. A great number of Marxists, Maoists, and Trotskyists were attracted to ETA by its promise of Basque social liberation through armed conflict, in a "revolutionary war". This strategy, however, was never put into practice. The priorities of those joined groups turned out to be somewhat different from those of ETA, resulting in the first fissures in the organization around 1965. The newcomers left ETA to join other leftist organizations.

The strategy of ETA was the use of an increasing spiral of violence, under the hypothesis that their terrorist actions would trigger the repression of the state on the whole society. The response of society, therefore, would be a sympathetic attitude towards them and might even lead to a popular insurrection against the establishment, with the consequent accomplishment of independence of Euskadi. This strategy achieved a certain success during Franco's regime. In the late 70s, with the transition to democracy, however, the state institutions reached a sufficient degree of legitimation to be accepted by the citizens. A new strategy had to be found by ETA: negotiations with the "factic powers" of the state, who, according to them, are only the army (Ibarra, P., *La evolución estratégica de ETA: 1963-1987*, 1987).

In the late-70s, after Franco's death, ETA split into two branches: the "mili" and the "poli-mili". This seemed to result from disparities in prestige among the fronts in the aftermath of terrorism carried out by the more extremist elements in the military front, especially following the 1973 assassination ot the President of the Spanish government, Admiral Carrero. The military front (the "milis") gained prestige in certain circles, with a consequent reduction in the prestige of the political front.

In essence, the main point of contention was a strategic one.The "poli-milis" tried to combine the military and the political actions, postponing the creation of a popular army to a previous vindication of the workers' needs through a mass action, within a marxist mass conscience.

On the contrary, the "milis" were promulgating the ideas learned from the French experience of May, 1968, and subsequently adopted by the Red Brigades in Italy. The strategy was to avoid any sympathizer not in favor of armed violence. They envisioned mass actions carried out by independent organizations but under the control and direction of ETA militants. They felt that the only way to achieve the liberation of the Basque nation was through military action, through a popular army and a kind of guerrilla war.

A variety of events led the "milis" to form *HB* (*Herri Batasuna*, Popular Unity), as its political branch, over which they maintain iron-fisted control and from which they receive protection. HB was formed in April 27, 1978, as a coalition of five parties: 1) HASI (Social Revolutionary Basque Party), a Marxist group evolving from ETA, founded and run by Santiago Brouard until his assassination in September 1984; 2) LAIA (Revolutionary Party of Basque Workers); 3) National Basque Action, a group that split from the PNV at the beginning of this century; 4) ESB (Basque Socialist Convergence); and 5) ASK (Organization for Popular Movement), a group promoting amnesty, antinuclear committies, and so on. In 1980, LAIA and ESB left the HB coalition. The latter eventually ceased to exist as an entity.

At present, HB represents about 10% of the Basque electorate (almost a quarter million voters with 6 seats in the last political elections), including those who, in other regions, would vote for the parties of the extreme left. Through its non-military organization, they kept the nationalist, radical and leftist conscience promoted among the people by ETA during Franco's period. Members recognize neither the Spanish Constitution of Dec. 6, 1978, nor the Basque Statute of Oct. 25, 1979 (this was accepted by the rest of the Basque parties and by about 90% of the voters, after about 40% abstentions). Consequently, they do not participate in the institutions of the establishment nor do they occupy parliamentary seats. The aims of HB are encompassed by a five-point program known as "KAS alternative": 1) amnesty - liberation of all Basque prisoners; 2) democratic liberties - legalization of all Basque political parties, including independent ones; 3) expulsion of state security forces (i.e., police and civil guard) from the Basque region; 4) integration of Navarra into the Basque country; and 5) an autonomy statute recognizing the national sovereignty of the Basques, their right to self-determination, and their right to create an independent state (with ties to French Euskadi), with armed forces under the sole control of the Basque government.

At this time, all the military efforts of ETA are aimed at the attainment of those five goals. Once all of them, or at least the main ones, are reached through violence or negotiations, ETA would offer an indefinite cessation of

terrorist acts. But it is not convenient to forget that, according to a recent internal document from their headquarters, seized by the antiterrorist service, the attainment of such an alternative "does not really solve the main problem"; it would only represent "a series of new and more favourable conditions for national and social liberation, within a long term strategy". Their main aim is not democracy, but national liberation: they have to achieve it, even if they are in a democcratic minority, by means of the violence.

The "poli-milis" had a more limited operative capacity, in part because they were fewer in number and in part because the organization has been subjected more frequently to deportations and to shutdowns by police. Nevertheless, their actions were widely noticed and had a major political echo: bombing tourist facilities, airports, railway stations, and supermarkets; kidnapping diplomats and political figures; and selective assassinations.

Politically, the "poli-milis" were integrated into the Basque left party *Euskadiko Ezquerra* (EE), a coalition for which mass action takes precedence over armed combat. The EE adds socialism to nationalism and enjoys the support of about 5% of the electorate (two seats in the Spanish Parliament).

In 1981, the Spanish government offered amnesty to ETA members guilty of bloodless crimes who would abandon the notion of armed struggle. About 300 "poli-mili" *etarras* accepted the offer. Their assembly dissolved itself on September 30, 1982, acknowledging that the sociopolitical conditions of the past years had now changed. Given present-day conditions, they concluded that the use of the democratic process would be a better strategy than taking up arms for defending the rights of their people. On Feb. 4, 1984, one of the amnestied, Mikel Solaun, was linched in jail by his former partners of ETA. And, since September 10, 1986, the date of the assassination of another of the amnestied, Maria Dolores González Catarani "Yoyes", at the hands of her old partners, none more has asked for amnesty, for fear of similar consequences.

ETA terrorism began to hit the newspaper headlines with greater frequency in the mid-70s. Their methods included kidnapping and the demanding of so-called "revolutionary taxes" and other extortions on threat of death. A "settling of accounts" among members, reminiscent of the *vendetta mafiosa*, is a part of their code, which also features *omertà* or the "complicity of silence". The number of assassinations, beginning with the one of a civil guard, that occurred in June 7, 1968, has now surpassed 600. Among the victims are included 50 high-level military officials, all killed since democracy was reinstated in 1977, and more than 200 civilians, a wide variety, from politicians to clerical

workers, fishermen, press vendors, women, children and even citizens from other countries. The Spanish Ministry of the Interior reports that 156 terrorists have been killed during the same period - 75 in the Basque region, 21 in France, and the rest elsewhere.

In spite of the many roundups against ETA -the first took place in 1963-, their French sanctuary prevented their dismantling, since the neighbouring country served them as shelter and logistic support. In fact, the French government allowed its territory to be used with impunity by the *etarras* for a long while as a sanctuary and as a staging area for attacks launched against Spanish territory. The juridical reason for that was the Franco-Spanish Convention of 1887 and the Law of 1927 that strictly prohibited extraditions of political detainees between the two countries.

The French view of ETA's activities, however, seems to have gradually changed during the last years, especially after the coming to power of Jacques Chirac. Among the reasons which may explain this change in French policy, one should be mentioned: France began to suffer terrorist action itself, from *Iparretarak*, the French version of the Spanish ETA, and from the GAL (Antiterrorist Groups of Liberation), directing counterterrorist tactics against ETA members in France, as well as a result of the increase in international terrorism in their own country. Closer cooperation between the police of both countries showed positive results, such as the discovery of their shelters, arsenals and files, the detention of their leaders and their extradition to Spain or deportation to third countries.

On several occasions, beginning in 1984, France has resettled some *etarras* in French provinces far from the Spanish border, and has deported others (around 60) to several African and South American countries. Many of them (24, according to our present information) are living in Algeria, thanks to an antiterrorist agreement between this government and the Spanish one, according to which, Algeria keeps some *etarras* there, and Spain manages to avoid in the country political activities of the Democratic Movement of Ben Bella (recently, for instance, three of their supporters have just been ejected from Spain).

France has also agreed to extradite *etarras* to Spain. These measures have been interpreted as an acknowledgement by the French of the essentially criminal nature of the activities of the *etarras* . According to minutes of the French Conseil d'Etat, the extraditions had to do with "infractions of common law which cannot be considered as of a political character or linked to a political crime". So, since July 11, 1986, until the present, 150 *etarras* have been extradicted under the absolute urgent procedure. 89 of them are still in prision.

The efficacy of this collaboration between both governments has been reinforced by several facts: The discovery of an important arsenal, previously stealed in Spain, at the French residence of the engineer Lafitte. The important information about the infrastructure and logistics of ETA, discovered in a furniture factory in Sokoa, in the French Basque Country, in Autumn 1986. More recently, the detention of Santiago Arrospide "Santi Potros" in Anglet, this past September 30, in whose possession was found, together with extensive documentation about places for hiding and for storage of arms, a list of about 600 collaborators of ETA and a report about some of their goals and terrorist actions programmed for the near future. At the present time around five hundred *etarras* are scattered about in 18 Spanish prisons (most of them are outside the Basque Country, in Castille -Herrera de la Mancha and Alcalá Meco).

All these events necessitated a change in ETA strategy to either of two alternatives: transferring to locations inside the Spanish border, thus risking severe repression by the police; or installing itself in some geographically more remote country, thus reducing its operative capacity. The situation, therefore, starts to change: the final pursuit to ETA seems already feasible.

Knowing this situation, since 1986 ETA insists more and more on a negotiation strategy, aware that it is the only way they really have to overcome the situation. But peace is not easy to achieve because, while the Spanish government seems only to want to find a way to disarm them, ETA pretends to negotiate the "alternative KAS", that includes several topics apparently in clear disagreement with the Spanish constitution, and, therefore, not really negotiable. Finally, self-conscious of its progressively weakening situation, ETA seems to renounce to the alternative KAS.

Towards the end of 1987, the different Basque political parties have gathered by the initiative of the *Lehendakari* Ardanza, the Basque Premier, trying to reach an agreement against violence. Almost all the parties represented in the Spanish parliament demonstrated equally their support for such an initiative, signing a document on November 10, 1987, in favor of a final eradication of terrorism. On January 12, 1988, all Basque parties, with only the exception of Herri Batasuna, signed unanimously a joint agreement against violence under the title "Agreement for the normalization and pacification of Euskadi". And just ten days after it, ETA offered a truce, asking the government for negotiations. Unfortunatelly, kidnappings and assassinations have not stopped after that date.

In sum, despite recurring internal problems, ETA has demonstrated staying power and relative consistency in regard to ideology and strategy. Its ideology is one of non-negotiable radical independence. Its strategy of violence is directed not at any particular form of government but rather against the national unity of Spain, as manifested in the Spanish state. Its opposition to national unity explains why its armed fight against Spanish democracy continues even today. But, since independence is not viable, the only reasonable exit from this too long and bloody situation would be the negotiation of a certain degree of autonomy or self-determination integrated within the frame of the Spanish State.

This eventual political solution, however, would not necessarily mean a complete eradication of terrorism, given the persistent feeling of cultural alienation among the youth. Its final eradication could only be achieved gradually through educational and social labour, emphasizing the need for generous forgiveness and mutual forgetfulness of past offences; eradicating the causes of the greviances and mutual misunderstanding, and encouraging tolerance and neighbourhood.

VIII. ESTRES

44

AN UNHEALTHY EFFECT OF WAR: THE PTSD*

J. Martin Ramirez

The 20th century has brought to the human race the technological capacity to commit species suicide. In a lead article, *The Economist* (6 June 1998) considers bombs, gas and microbes, and "the desperate efforts to block the roadway to doomsday". The threat of cataclysmic war has not dissipated, especially since the collapse of the Soviet Union has brought with it an aging of Russian technical systems and the danger that former weapon scientists might sell their skills abroad. The risk of an accidental nuclear attack, and its likely medical effects, given the exposition of millions of people to potentially lethal radiation, has increased therefore in recent years, threatening a public health disaster of unprecedent scale. A colleage from the Harvard University Medical School, Lachlan Forrow (1998), concludes that 'the prevention of nuclear war should be one of the medical profession's most important goals'. This means that we should keep working actively to help build support for the policy changes that would prevent such a disaster, as a spreading of nuclear, chemical or biological weapons, like we are doing the last half century in the context of these Pugwash Conferences.

Another important unhealthy effect of war is the syndrom known as **Posttraumatic Stress Disorder** (PTSD) which has become a political ligthning rod among mental disorders given that traumas such as wars are perpetrated by human beings. It is a trauma related to wartime experience: many prisoners of war and combat veterans return from war in a hyperaroused, vigilant, and at times agitated state that may persist or even worsen over time[61]. PTSD has considerable prevalence and morbidity, being a far too common outcome of participation in intense combats, which has had an important historical impact on its conceptualization.

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* In: Joseph Rotblat (ed). *Lond Roads to Peace.* Singapur: World Scientific 2001. pp 390-396

[61] Each sex has somewhat different comorbidity: whereas its most common causes in men are combat and physical assault, witnessing of death or severe injury, women are exposed to different types of stressor experiences, such as sexual assault and abuse.

My personal experience with it, however, does not come from any war, but from another kind of disasters: the catastrophic earthquakes here in Mexico, in 1985, and in Kobe, just a few months after the 1995 disaster, on occassion of a visit to Japan for the 50th Aniversary of the Atom Bombs. Besides the direct damage, injury and mortality, at the time of the disaster survivers experienced extreme threat to life, witnessed horrifying deaths, heard agonizing screams, and suffered extensive loss of family, and later were subject of prolonged severe post-earthquake adversities and chronic exposure to traumatic reminders, including the sights of debris and unrepaired, heavily damaged buildings.

The first medical references to the traumatic stress response date back to accounts of veterans and female civilians during the American Civil War. Studies of military personnel during World War I and II, as well as during the Vietnam War and the crisis of the Persian Gulf have been also conducted. Since then, it has been documented under a wide variety of names including: anxiety neurosis, battle fatigue, bomb happy, cardiac neurosis, debility, disordered action of the heart, effort syndrome, hysteria, irritable heart, physioneurosis, neurocirculatory asthenia, neuroasthenia, neurotic illness, psychoneurosis, shell shock, somatization reaction general, psychogenic asthenic reaction, vasomotor instability, vasomotor neurosis, and war neurosis.

What I'm planning to do in this paper is to construct the picture, even if still incomplete, of what happens to some people exposed to extreme stress, like war: what are the main symptoms of this syndrom and their possible biopathological mechanisms, all this in the hope that understanding the means by which trauma may be neurobiologically transduced to produce PTSD, may also help in its future successfull prevention and treatment.

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'Trauma' can be conceptualized as a sudden discontinuity in experience, and it has come to signify all sorts of damaging effects of life events. Trauma increases arousal, produces anxiety, increases responsiveness of locus coeruleus neurons to excitatory stimulation, and noradrenaline turnover in specific brain regions associated with the regulation of reaction, memory, and emotion in experimental animals, activates the sympathetic nervous system, and causes biologic changes of the 'fight or flight response'.

PTSD represents a specific type of adaptation to a history of an intense overwhelming trauma, which may not necesarily reflect normative stress responsiveness. The littlest thing can cause to suffer: events that may seem innocuous to others -a sudden shadow, a creaking floorboard,

a policeman passing on the street- can serve as reminders which trigger deep fear and major physiological reactions: the heart picks up, begins to pound, adrenaline levels rise and then suddenly the 'flight-or-fight' response kicks in, bursting forward, full speed ahead.

The forth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (1994) proposes under the name of PTSD the result of the exposure to a stressful traumatic event persistently reexperienced. These events should involve actual physical injury or threat to self or others' integrity and elicite a response of fear, helplessness, or horror in the exposed individual. For a diagnosis of PTSD, therefore, is required an external, environmental influence, outside the range of usual human experiences. It has an exogenous origin.

Although these exceptionally threatening or catastrophic events are likely to cause distress to almost everyone, there are differential responses. Whereas most individuals appear able to cope without severe psychological disruption -the acute stress symtoms typically abate within weeks-, in others the PTSD first emerge months or years later. The experience of helplessness and powerlessness is a central aspect of the acute response to the trauma if the individual is going to develop PTSD[62]. Even if there is a significant rate of natural remission in a number of cases: approximately 60% remit within a year of the trauma. In other cases, there may be a lifelong PTSD pattern[63] with a propensity to have a recurrent course of oscillating between active and remitted symptoms. This disorder thus is not a normal response to an abnormal experience, but a relatively rare psychiatric illness which only emerges in a minority of the individuals exposed to a traumatic event[64].

PTSD involves a series of transitional states, with a progressive modification of its phenomenology with the passage of time, and with multiple variations of its forms, namely, acute, delayed, chronic, intermitent, residual, and reactivated patterns. To some extent, it may occur in cycles: avoidance may alternate with reexperiencing, or coexist with them, becoming an example of a cycling illness (Arnold, 1985). The course is variable, but typically begins in the immediate aftermath of the trauma and continues, affected by both the nature of the precipitating event, the

[62] Soldiers who become acutely distressed at the time of combat seemed to have a much higher risk of PTSD than those who coped at the stress reactions (McFarlane, 1997).
[63] The Vietnam readjustment study, one of the benchmark studies of trauma, found that 19 years later, 15% of veterans still suffered from PTSD
[64] Its prevalence ranges from 1% in the general population, according to Helzer et al. (1987), to 12% of men and 21% of women, according to Kessler et al (1995).

characteristics of the traumatized individual[65], and the recovery environment, being strongly related to the degree of the exposure, and the frequency of the reminders and level of physiological reactivity to them.

Three symptom clusters, representatives of arousal states of chronical nature and paroxysmal nature, are described in DSM-IV as essential of PTSD: **recurrent intrusive features**, avoidance behaviors, and autonomic arousal.

1) The central feature of PTS is that patients reexperience elements of a trauma[66], reporting involuntary retrieval of horrific autobiographical memories expressed in nightmares, flashbacks, dissociative events, and unwanted intrusive thoughts and memories[67], eliciting paroxysmal responses of fear and panic. The sympthom described as 'flashbulb memory' can be a vivid, seemingly 'photographic' memory. This hypermnesia for events experienced during that period of emotional excitement, although is not necessarily free of errors, is generally less susceptible to decay that are memories of events that so not produce strong emotional reactions. Emotionally arousing experiences tend to be well remembered. This fact strongly suggests that the storage of 'flashbulb memory' for emotionally arousing events is modulated by a distinct endogenous neurobiological system, normally inactive in nonemotionally arousing situations (Cahill, 1997).

2) Alternately, the victim shows 'negative' sympthoms, with loss of interest, inability to feel deeply about anything, and **avoidance** behaviors such as withdrawal, numbing[68], and their associative proclivity to depression, intolerance of environmental stimuli, with irritability, anger attacks, and substance abuse; a consistent tendency

[65] Some individual predispositions and familial risk factors may be strong predictors of PTSD: it is possible that persons with smaller hippocampi have a risk factor to exposure to trauma; and the observation of increased rates of psychiatric illness in family members of probands with PTSD, also lend support for familial influence on its susceptibility.

[66] PTSD, representing an unhappy confirmation that 'emotional memory may be forever', may represent the best human illustration of the ability of 'significance' to facilitate 'remembrance' (McGaugh, 1990)

[67] PTSD symptoms correlate with poor source monitoring: the cognitive symptoms, and in particular the reexperiencing symptoms, such as unwanted flashbacks or intrusive thoughts, may result from a failure to correctly identify the source of traumatic memories: the retrieved information is incorrectly interpreted as currently taking place. The personal meaning of information may be less important in its effect on cognitive processes than its generally traumatic nature; memories are a secondary consequence of the disturbance of selective attention and working memory rather than solely a primary imprinting of the traumatic memories and the underlying biological concomitance (Zeitlin & McNally, 1991).

[68] A subjective sense of numbing was suggested by the reports of 5 of 14 soldiers involved in a Namibia ambush, who had experienced constricted affect (Butler et al. 1996).

towards confusion of information from different sources could also lead to anticipatory anxiety.

3) Characteristic is also an autonomic arousal of the nervous system, with physiologic hyperreactivity (McFall et al 1990), an exaggerated startle (with absence of startle habituation) potentiated by fear[69], hypervigilance and insomnia; these sleep disturbances (more difficult with sleep initiation and maintenance) are prominent complains of PTSD patients[70].

One of the symptoms included in the DSM-IV definition of PTSD is **dissociation**, also termed 'knowing without awareness'. Although it is a component of a normal phenomenon, like hypnosis, it may also occur to a degree that may reach pathological proportions, resulting in specific deficits, such as a failure to integrate aspects of identity (dissociative identity), memory (dissociative amnesia), perception (depersonalization), and consciousness (dissociative trance). Failure to comprehend the experience (i.e., to dissociate) plays a critical role in making a stressful experience traumatic. Dissociation causes memories of the trauma to be organized as sensory fragments; this fragmentation is accompanied by subjective experiences of depersonalization and derealization (Van der Kolk & Fisler (1995).

There is a high prevalence of dissociative symptoms in PTSD: a) derealization experiences is a common response (report of 'unreal surroundings', hallucinations and delusions, dream-like experiences…); b) depersonalization ('self-detaching from body', feelings of unreality and lack of emotion); c) amnesia or memory impairment (difficulties with everyday memory); d) a subjective sense of numbing; e) stupor… These dissociative symptoms, especially numbling, may be adaptive at the time of trauma, but their prevalence over time may become maladaptive, limiting the brain's ability to reprocess traumatic memories. The lack of control, dysphoria, and helplessness that typifies the traumatic effect is reinforced by repetition. Trauma would elicit dissociation of experience, becoming the matrix for later posttraumatic symptoms. Therefore they may be strong predictors of PTSD later development.

Although it has been focused on the effects on the mind, PTSD also has an **impact on the brain**, even if this impact on physical health is a rather neglected topic. For example, a greater neurological impairment has been demonstrated in

[69] The startle response, a defense mechanism found in all mammalian species, has been noted in adults with PTSD (Grillon et al, 1996).

[70] Its main dimensions relate to arousal regulation and REM-related functions of dreaming and memory processing.

Vietnam veterans with PTSD, who showed an increase of so-called neurological 'soft signs', considered to reflect immaturities in developing of language, motor coordination, or perception (Cox & Kudwig, 1979)[71]. Psychophysiological measures also aid in correctly diagnosing a larger physiologic reactivity to trauma-related imagery in PTSD subjects: the patients have faster resting heart rate, higher blood pressure, or facial electromyogram responses, greater skin conductance, and stronger facial EMG responses. This larger reactivity, even if it shows lower sensitivity and specificity, can remain high even when the severity of self-reported symptoms declines (Orr, 1990). Some electro-physiological and magneto-encephalic[72] abnormalities associated with PTSD are: a) slow reaction time; b) decreased ERP[73] amplitude (P300 as well as CNV[74]), which may be related to the lack of motivational and emotional involvement and the predominance of avoidance and numbing[75]; c) abnormal sensory gating in PTSD, as assessed by auditory ERPs[76]; d) attenuated right-hemisphere P1[77]; e) positive shift at prefrontal sites[78]; and f) a normal augmentation pattern for N100, combined with a reducing pattern for P200[79].

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The previous observations support the concept that PTSD is a complex, multipathogenic disorder of atypical nature, the occurrence and persistence of which depends on many risk factors other than trauma, including other stressful life events as well as minor psychosocial stressors. It rarely occurs alone. One of the fundamental questions is how the acute response to a brief and single stressor merges into a

[71] Their past developmental history, however, raises the possibility of pretrauma impairment as a risk factor for an ulterior PTSD.

[72] MEG involves measurement of the magnetic field generated by intracellular neuronal curents.

[73] Event-related potentials are obtained in recordings of EEG from subjects submitted to the performance of tasks involving discrete S-R events. Analyzing the temporal information given by the positive and negative deflections of a wave, and the spatial information provided by electrodes distributed across the scalp, yeald valuable information. There are related to both cognitive and emotional factors.. Compared to PET or MRI, and the like, EPs methods are relatrively inexpensive and totally noninvasive.

[74] P300 is related to 'context updating', whereas CNV (contingent negative variation) is influenced by attention, motivation, and motor preparation

[75] As they are modulated by neurochemical systems also implied in the frontal defense system, such data could imply a weakness of catecholaminergic system mobilization.

[76] Its most robust abnormality, a reduced P3 amplitude, may index the disturbed concentration found, suggesting a general information processing abnormality which may reflect attention or concentration difficulties.

[77] It suggests an adaptive strategy to limit perceptual imput in the same hemisphere, which is known to play a special role in emotional processing and autonomic arousal.

[78] It indicates a different tonic level of cortical excitability over an area involved in suppression and control of emotion.

[79] It indicates that the reducing effect reflects a lower activation of auditory association cortex and a newly identified P300, suggesting an exaggerated emotional response.

constellation of symptoms. Intrusive thoughts immediately following a traumatic event may modify neural networks through a serie of predictable biological events and mechanisms, leading to the complex biobehavioral syndrome of PTSD. Let us sumarize the main mechanisms, following four points (see also: Murburg, 1997):

First. Establishing that there is a biological basis for psychological trauma is an essential first step in allowing the permanent validation of human suffering. It is now quite clear that **stress**, and nearly any experiences of significance to which an organism is exposed, **alters neurobiological systems**. Even if, by definition, PTSD is caused by an external, psychologically (rather than physically) stressful event, the ultimate explanation of the role played by environment must be made at the cellular level. It may represent an example of the ability of external events to induce lasting brain alterations.

a) At **neuroendocrine** level, stress induced alterations are found in many systems, such as hipothalamic-pituitary-adrenal (HPA) axis and catecholaminergic systems.

> The widespread distribution of corticotropin releasing factor (CRF) in the central nervous system points to its multipotential role as a neuroendocrine regulator; the presence of this peptide in limbic and cortical regions, with abundance of catecholaminergic and serotonergic neurons, further support its consideration as the major candidate in mediating stress experiences and subsequent pathology. A pronounced central CRF activity has also been found in patients with PTSD, the interpretation of which is somewhat difficult. It seems that early life stress affects the central CRF system with a persistent increase in its neuronal activity (Heim et al, 1997).

Unlike the well-documented observations of HPA axis dysregulation after chronic stress and in psychiatric disorders such as depression (increased adrenocortical activity with highest cortisol levels in depressive, and resultant dysregulation of this system), PTSD patients show a hyperdynamic, hyperregulated highly sensited HPA axis characterized by very low basal cortisol levels[80], lower than people who do not experience trauma at all, making their complaints about extreme stress seem like mere ketching. Traumatic events can also change a survivor's basic biology

[80] A biological profile of lower levels of urinary free cortisol, lowest basal cortisol rise and hypersuppression cortisol by dexamethasone is reported not only among adults with chronic PTSD (Yehuda et al 1991), but also in adolescents living close to the epicenter of the 1988 earthquake in Armenia: five years after it they still showed significantly more severe PTSD symptoms, with lower cortisol levels and 'supersuppression' of cortisol and highest in depressive (Goenjian et al 1996). This apparent uniqueness of the neuroendocrine constellation in PTSD is an unexpected finding, since cortisol helps the body temper stressful situations.

by an extremely high number of glucocorticoid receptors, higher than people who do not experience trauma at all. This supersensitive response to cortisol mediated by upregulation of glucocorticoid receptors suggests a supersensitive glucocorticoid system in PTSD subjects, allowing a maximal stress response that is effectively controlled by increased negative feedback regulation[81].

These neuroendocrine data suggest that the decreased adrenocortical activity in PTSD leads to a heightened arousal of the catecholaminergic system: noradrenaline functions are abnormal, and noradrenergic neurons are selectively activated by stress (Southwick et al., 1993). The peripheral adrenaline release reflects peripheral sympathetic nervous system activity, and tonic stimulation of the adrenal medulla, and may contribute to the consolidation of traumatic memories and to the progressive worsening of symptoms. Although any vulnerability may predispose to the development of PTSD, given its myriad facets, a predisposition towards enhanced reactivity of the mesocorticolimbic monoamine systems may be of central significance. These peculiarities afford an opportunity to use neuroendocrine measures as aids in the diagnosis of PTSD (Yehuda et al, 1991).

b) At functional **anatomic** level: The hippocampal formation, which contains high levels of adrenal steroid receptors, being vulnerable to the effects of stress, could play a distinctive role in the mediation of traumatic stress: psychosocial stress releases excitatory amino acids which disassemble the dendritic cytoskeleton, leading to hippocampal atrophy (Magariños et al (1995). PTSD patients show a characteristic reduced hippocampal volume, which has been suggested to be linked to the development of cognitive changes; given the crucial role of hippocampum in memory storage and retrieval and the well-established relation between recent memory inpairment and diminished hippocampal regions (Squire, 1986), one may hipothesize that superior memory system and hippocampal function may protect against the development of chronic PTSD, and that the dysregulation of memory could be explained through impaired hippocampal function; its decrease would be related to alterations in mnemonic functions. A possible factor leading to decreased hippocampal volume in PTSD is hypocortisolemia, because there are cortisol receptors on hippocampal neurons (Bremmer et al, 1995). Alcohol, which is a common comorbid disorder of PTSD,

[81] These control cortisol's effectiveness, acting like little hands that reach out of the cell, grab the hormone, and drag it back into the nucleus where it can take control. With more 'hands' to grab cortisol, PTSD patients are more responsive to their hormonal levels; this might explain why they are so ready to respond to external stimulation: "what they are doing is using the same kinds of behaviors that might have been appropriate to sustain one's life during the time of the trauma -being hypervigilant and highly attuned- but now that the trauma is gone, the behaviors no longer work" (Yehuda et al, 1991). Even if the danger has disappeared, its effects cannot be erased.

may also preferentially damage the hippocampus (Eskay et al 1995).

Beyond these reduced hippocampal volumes, neuropsychological investigations with MRI and cognitive activation studies of PTSD with PET have also revealed other gross abnormalities in PTSD, such as focal white matter lesions; and activation of the anterior cingulate cortex and the right amygdala as well as deactivation of Broca's area, in the left inferior frontal cortex (Shin et al, 1997), likely indirectly influenced by peripheral adrenaline release.

c) At the **organismic** level, stress disrupts important functions, from sleep to the ability to process information. The alterations in the cognitive performance occurring in PTSD could be roughtly characterized in two ways:

1) a poorer performance on most neurocognitive tasks, due in part to specific impairments in memory performance, as well as to a nonspecific or diffuse concentration or memory deficit, reflecting attentional disturbance, with difficulties retrieving specific memories from their past; this failure to unfold their autobiography, stems more from affective based effects of stimulus content rather than disruptions in basic memory systems per se[82]; and

2) a preferential bias or increased selective attention to traumatic experiences, manifested by changes in speed, accuracy, and depth of processing and by an enhancing in explicit memory for trauma-related material (Wolfe & Schlesinger, 1997); the emotionally influenced hypermnesia is modulated by a distinct endogenous neurobiological system, involved in regulating the long-term memory storage, which is normally inactive in non-emotionally arousing situations; it consists fundamentally by two elements:

    a) stress adrenal hormones (particularly those cathecolamines adrenaline and noradrenaline acting at ß-adrenergic receptors), released during and immediately after a stressful emotional events, influence memory, enhancing it at low doses, while impairing memory at higher doses[83]; and
    b) the amygdaloid complex, a group of interconnected nuclei in the medial temporal lobe, which is clearly involved with emotions and hormonal responses to stress, and influences memory storage

[82] The information kept out of consciousness nonetheless has effects on it, given the 'off/on' quality if this reversible amnesia (Spiegel, 1981).
[83] Its removal generally results in memory impairment; veterans with PTSD had heightened noradrenergic response to combat-related sounds (Blanchard et al, 1991).

activated mainly by stress hormones[84] (Cahill, 1997).

Second. **Prior stress** exposure causes a serie of cellular changes that **alter** -either adaptive or pathologically- behavioral and physiological **responses to subsequent experiences**. F. ex., patients with PTSD show increased numbers of glucocorticoid receptors on lymphocytes or in different structures such as hippocampus and hypothalamus, with a lower cortisol response. Although the effects of trauma are complex and involve the initiation of new symptoms and the reactivation of prior affective distress and hyperarousal, the exposed population has greater symptoms of depression, somatization, phobia, generalized anxiety, PTSD and alcohol abuse.

Some of the biological abnormalities reported in PTSD are specific, because they are conceptually linked to the traumatic event. But there are also some other rather unspecific long-term effects of trauma. While PTSD has been a valuable conceptualization of the trauma response, it is only one of many psychiatric long-term effects of trauma, insuficient for describing the full-range of them, such as: a) impact on physical health[85]; b) comorbid psychiatric disorders usually accompany PTSD, with a propensity to have a recurrent course[86]; c) the experience of threat or trauma can also modify the individual's internal vulnerability to subsequent events and mold on values, beliefs and social attitudes; e.g., it is predictive of other behavioral factors that are likely to affect biology, such as smoking, caffeine intake, and exercise.

Third. Neurobiological **responses that allow short-term survival** of acute stress situations, like the CNS release of noradrenaline which participates in the activation of sympathoadrenal responses to a stressor, **may ultimately be detrimental**; f.ex., high levels of circulating catecholamines may be associated with cardial stress and hypertension, and chronic elevations in glucocorticoids with osteoporosis (Reid, 1989), muscle wasting (Kaplan & Natareda Shimizi, 1963), and reproductive dysfunction (Sluter & Schwartz, 1985).

[84] Amygdala, however, is not a site of memory storage; its primary role in memory consists in regulating memory storage in other brain regions, mainly via stria terminalis (Roozendaal et al, 1997).

[85] Combat exposure predicted earlier death independent of PTSD: mortality of concentration camp victims was much higher than that of control populations, 46% of those men who had experienced heavy combat were dead or chronically ill by the age of 65 (Lee et al, 1995), and merchant seamen who manned the convoys during the war showed similar long-term effects (Askevold, 1980).

[86] High rates of comorbidity appear to be most salient in disorders such as: depression, anxiety (e.g., phobias and panic disorders), substance abuse (alcohol and drugs), and personality disorders (especially antisocial and borderline) in traumatized populations.

And Forth. The possibility that traumatic stress changes the brain, alarming as it is, offers intriguing **possibilities for** the **prevention and treatment** of this disorder, besides the possibility of inducing pathogenic neurobiological changes. Other experiences may cause compensatory neurobiological changes. Althouth it may not be possible to return the individuals biology back to pre-trauma conditions, or to 'undo' a traumatic experience, nor some neurobiological alterations, such as hippocampal damage, via a psychological therapy like 'corrective experience', some others may be more easily counterbalanced, and at least it may be possible to compensate for it. Furthermore, some other biological changes can also have adaptive functions, such as the upregulation of glucocorticoid receptors or the enhancement of catecholamine responsivity.

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All the previous considerations have important implications for planning the prevention and treatment services for populations traumatized by wars, earthquakes and other similar events.

Contrary to what was believed not too long, there is no mind-body dichotomy, nor a distinction between 'functional' and 'organic' mental illness (Pribram & Ramirez, 1996). The central principle of modern medical science is the correlation of function and structure: all mental disorders are a complex dynamic with important functional and organic aspects. Assessment of biological measures may help us answer whether psychological trauma per se alters biology and, if so, whether psychological therapy can return the individuals biology back to pre-trauma conditions or at least to a more harmonious state. Recognizing that there is a biological basis for psychological trauma and that psychological trauma may alter biology therefore is an essential first step in seeking a therapy to release the human suffering. And although we have not examined it here, no man is an island. Any human suffering always has an effect on the family and loved ones and finally extends to the society at large.

The hope of imaginative solutions to these and related problems is expanding our knowledge tremendously. Psychosocial treatments, such as stress inoculation training and exposure[87], are effective in reducing PTSD and other stress; particularly some cognitive behavioral treatments, such as meditation, are becoming increasingly popular. Just as a negative trauma may cause negative biological changes,

[87] An exposure consisted of four components: education about common reactions to trauma, breathing retraining, reliving (prolonged, repeated exposure to the trauma memories), and repeated *in vivo* exposure to situations the patient is avoiding because of assault-related fear (Foa & Jaycox, 1997)

so a positive action can possibly alter the biological rythms of the persons.

Our struggle for life has always a positive side, even when analysing a political rod like this health disorder which is a product of war, a human invention as stated in the Seville Statement of Violence (1986). We are made aware how intense, complex and often enduring are biological, mental, behavioral, and cultural responses associated with traumatic stress. Everything is interrelated, such as psychology, biology and sociology. It is in finding ways of how to positively influence this complex dynamic that eventually we must come to realize that for world peace 'inner peace' is necessary, as well as for inner peace world peace is also necessary.

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46

URBAN STRESS IN THE METROPOLIS: Psychobiological Consequences*

J. Martin Ramirez

In this chapter on metropolitan gigantism I want to discuss the effects of the size and density of very large agglomerations on the human being. on his value systems and on his psycho]ogy. 1 would prefer to say on his '*psychobiology*' because there is no clear demarcation between somatic and psychic effects: biological and sociocultural factors are closely interwoven and their separation is almost impossible.[i]

I must confess that 1 am not prone to predictions or conjectures about the future. for the following reasons: experience often shows that predictions are not as easy and straightforward as they sometimes appear to be; and I.also believe that the future of mankind is far from being determined. On the contrary, it will become what people want ***it.*** to be.

I hope that the future metropolis will not develop toward a '*necropolis*' and that the metropolitan megastructure need not be inevitably an inhuman and restrictive urban environment. Indeed. sorne recent trends seem ~o point toward more rewarding and viable directions.[ii] However. in this paper 1 shall examine the possible psychobiological consequences of very large human agglomerations.

Before addressing the variety of pressures exerted by the man-made urban environment, in particular focusing on their deleterious effect on the human psvchobiology, two things should be clarified. First, most of the problems to be discussed are not *specifically urban* ones, although it is in the urban environrnent where they are the most frequent: they are the price we pay for the progress of the human civilization. Second. it would be unjust to leave a too-pessimistic impression of the urban phenomenon. lf we focus only on the negative side, it is just because that is what needs a remedy. We should not lose sight of the positive aspects of urban society. Urbanization is a desirable world-wide phenomenon that provides both an irresistible lifestyle

* In: E. GALANTAY, Metropolis in transition New York: Paragon House, 1986; pp 123-130

and a pattern of allocation of human effort and time.[iii] G. Nobelo justly reminds us of the superiority of urban life over life in the rural envíronment.[iv] Krivatsy. in hís paper on the *San Francisco Bay Region*, even asserts that the modern metropolls —while not perfect-- may be the best form of urban settlement now. To try to mitigate the negatíve consequences of urban gigantism does not imply a bias in favor of ruralization.

One of the major *stressors*[v] brought by urban development is the excessive crowding produced by the spatial concentratíon of a heterogenous population. Overcrowding is the root cause of a number of severe socioeconomical and psychobiological problems.[vi] Although high density *per se* is not an evil. a combination of factors related to overcrowding results in varlous 'negative social benefits'.[vii]

The scarctty of open space in the metropolitan environment. coupled with the use of mechanized conveyances --cars elevators. etc.— deprives the inhabitants of healthy physical exercíse. Negative physiological effects on the organism have been observed in Hong Kong where children living in high-rise apartment buildings and getting little exercise have 8% less lung capacity than the children of hillside squatters who lead a very active outdoor life.[viii]

The fast life, the fatigue, the isolation, the stress caused by traffic congestion in the big cities produce other acute negative effects on health besides traffic accidents. The physical pollution resulting from the accumulation of harmful industrial wastes, garbage disposal, leaking sewage systems, the emission of smoke carbon dioxide and other toxic gases, and 'deafening' noises and vibrations may be the cause of even more serious disturbances since their symptoms are chronic and difficult to detect due to their subtle nature.[ix] Likewise, the morbidity rate increases in crowded environrnents due to stress factors such as fatígue which weakens the organisrn, making it more susceptible to disease. Malnutrition and the lack of proper hygiene and sanitatíon facilities add to the misery of livíng in many urban environments. Respiratory-tract diseases are more serious in nature when they occur in places like crowded urban settings which lack proper ventilation. Dr. Diana L. Mendoza reminded us at the l3th ICUS Conference of the results of experiments attempting to determine how socio-environmental factors such as overcrowding affect the organism and how psychologlcal and nervous stimuli affect the heart function and the circulatory svstem. For obvious reasons, experimentatíon wlth human beings is often impossible but it is entirely justifiable to extrapolate the results of animal experiments.

Experíments carried out by Richard Venier of the Harvard School of Public Health in Boston suggest that people suffering from heart disease increase the risk of early heart failure by living in a stressful urban environment.[x] It has

been demonstrated experimentally[xi] that crowding can alter feelings, increase anxiety and influence other affective behaviors. In crowded cities the competítion for scarce resources and the latent aggressivity causes feelings of anxiety. An individual who feels 'threatened' yet unable to flee physically -like his primitive hunting-gathering ancestors—will try to escape into mental space. However, this psychological defense mechanisrn burns out adrenaline and other toxins and the energy stored in our muscles. The result may be a long-term alteration of the heart function or irnmediate death by '*asystole*' which is a form of heart failure.

Crowding can also take the form of an excess of nonphysical contact and communícation resented as a form of harassment typical of modern urban live. Most of us are familiar with the rise of bad temper when the phone rings at an improper time: it is a small example of those too-many contacts with strangers bombarding us with an excess of stimuli and Informatíon.[xii] Conflict, tension and stress bring about a fatigue of our social reactíon processes. Every inhabitant of a modern city is familiar with the surfeit of social contacts and knows the disturbing feeling of not being as pleased as he ought to be at the visit of a friend, even if he is genuinely fond of him. For this reason every year more telephone numbers are unlisted in the dírectory to avoid unwanted calls. An accelerated life-pace with an excessive number of coflicts with strangers leads to a weakeníng of the family bonds and the disappearance of personal relationships within the social groups defined by spatial proximity such as the neighborhood. The result is that people, especially young ones, feel lonely and alienated, less 'visible' and therefore less responsible. This explains, at least partly, the higher rates of suicide in larger cities. especialy in the so-cal]ed 'welfare' societes. Social deviance can also be induced indirectly by crowding which destroys the feelings of identity and of solidarity.[xiii] The fact that unemployment leads to a higher rate of deviant behavior, crime and aggressiveness does not seem exclusive of our species. It has also been observed in captive wolves and Rhesus monkeys.[xiv] When their chief occupation of hunting for food was taken away due to human feeding. there was an increase in quarreling. An effective way for decreasing violence, therefore, seems to be to guarantee full employment.

Given the characteristic sensory overload of urban environments, it is advisable to apply a selective principle with regard to the hour in which to use time and energy, blocking the reception of those with less priority and to fllter them out to decrease the stimulation intensity.[xv]

Are pathological characteristics inherent to the modern megalopolis? Psychobiological aberrations show a higher rate in congested areas. There are various somatic illnesses and

respiratory dlseases due to the increased possibility of contagion. humidity and irritant gases. Due to the lack of sunshine, rickets also presents a problem, and there is a greater incidence of ulcers, diabetes, arteriosclerosis, obesity due to inactivity,. loss of hearing from the excess of noise, and hypertension.

Of special interest are the psychic consequences of urban over-crowding. A simple index of tension may be the speed of walking: people in big cities have been observed to walk twice as fast as those in small towns. It is widely agreed that crime, deviant behavior and human segregation are higher ín urban areas, that they increase as the cities grow in size, and that slums are a source of unrest, violence, and delinquency.[xvi] The erosion of the quality of Iife and of social relationships is a consequence of many interrelated stress factors, such as overstimulation or an excessively rapid generational change and the coping problems which usually follow migration.

Such factors bring on the further degradation of living conditions by a process of 'cumulative causation'.[xvii] Stress caused by living in big cities is one of the reasons for the decline of social cooperation, a hypertrophy of competitiveness, a lack of consideration for others, and the rise of aggressivity. The lack of altruism is a characteristic of big cities. Darley observes that people are more ready to help others in the underground than in the airport. He found that noveltv is an inhibitor to helping. People are more ready to help one another in the subway because most of them use it for daily commuting. Being familiar with the subway environment they are not as inhibited by noveltv stimuli as in the airport. [xviii]

Another factor of urban stress, according to Tinbergen[xix], is the high pace of generational change whereby, with each new generation, it becornes harder for young people to understand their parents. This produces great anxiety and uncertainty.[xx] Socially disruptive behavior develops, as does rebellion, against restrictions through too many regulations and rules limiting an individuals own freedom of decision and of action.[xxi] Continuous dissatisfaction makes them look for happiness through other ways. Most often. escape through alcohol and drugs is attempted, leading to an increased rate of deviant behavior and violence in urban environments.[xxii]

An experiment carried out by Andrej Eliasz and his Polish colleagues shows how people of different temperament are also differently influenced by the urban environment. Boys of 15 and 16 years of age were observed in an industrial city of Silesia, and their spontaneous activities and their behavior recorded during their free time down-town where there were more sources of stimulation (noise, danger, noveltv), and also in the periphery of the city with a less

stimulating atmosphere. Two groups were assessed bv a temperament inventory: high-reactive persons, very sensitíve even to low stimuli but with less endurance to them. and low-reactive people, with a low susceptibilitv to stimuli but with high endurance to strong ones. Whereas high-reactive bovs behaved most of the time in the same way in both places, low-reactive ones showed a more spontaneous and independent behavior, adjusted to the space and the possibilities.

There are also frequent behavioral disorders resulting from new social circumstances. Current figures from psychiatric sources indicate that in our particular form of urban culture there is a high occurrence of disorganized personalities: schizophrenia, neuroses and personality disorders are much more common in big cities than in rural areas.[xxiii] One person in five has serious psychiatric difficulties during his lifetime, and one in ten wilI at some time enter a mental hospital. What is disorganized in them? Primaryly, it is their social relationshíp which seems to be maladaptive.[xxiv]

Such problems of human maladjustment are often caused bv migratory movements.[xxv] Frequently there is a strong anti-immigrant sentiment among the original population which is shown ín aggressive reactions towards alien newcomers of different ethnic, religious, linguistic or social groups. The prob]em of cultural and social integration of such minorities is even more dificult when large numbers of people have been separated from their family, friends and cultures. The fact that such situations are prone to social disintegration and to the breakdown of interpersonal relationships explains the prevalence of aggressiveness and violent situations.

How may we interpret those data? The threshold for stimuli and the range of optímum differs according to the individual temperament: low-reactive people are more resistant to social pressures; they behave in the same way in different environments regardless of high or low level of stimuli — also they are more tolerant. On the contrary, high-reactive people adjust their behavior to social regulation, trying to be in conformity with others to avoid punishment and personal tensions; they are more susceptible to changes in their motivation. Since there is a high level of stimulí in our urban society, there will always be a lot of problems with high-reactive people. Individual differences, therefore, have to be taken into account when we studv how people behave under environmental pressures. lndividual conditions require individual approaches.

Even though we have noted a few stressors which are common te any rnetropolis, we should avoid over-generalization assuming that people react in the same way to environrnental pressure variations. We cannot ignore that there is a diversitv in the supply of environmental

situations as well as in the psychobiological and genetical idiosyncrasies of each person. The quality of living conditions reflects a great variety of needs and wants, depending upon historical experiences, social background, religious convictions, current ideologies, cultural conditions, and economic circumstances. The feeling of crowding, for example, depends upon the cultural and sexual context —males seem to need more space than females— and even on situational differences. (*"Was man in der U-Bahn Üeberfüllung nennt heisst in Nachtlokalen Atmosphere"*[xxvi] i.e., the degree of crowding resented in the subwa is enjoved in a disco or in a bar.)

Each person perceives the same environment in a different way and us influenced by it in a particular way. To demonstrate this fact all that is needed is to ask a group of people to draw from memory the map of their city or to describe a place known by all of them. Their subjective interpretation will differ from the same objective reality: each observer will emphasize what is important to him. Although the harsh realities of the mass slums in the metropolis have destroyed the urban dream for millions, the return to their villages would be an even greater nightmare. The urban lifestyle offers great advantages in comparison to the country: lower mortality rates due to more effective health services, improved access to cultural and educational facilities, higher incomes. Cities have always been the prime movers of innovation in all civilizations, intellectual, social and political catalysts.

As the articles by Dwver. Blumenfeld and Robertson indicated, the historic trend toward enormous conurbations is increasingly checked by centrifugal forces causing out-migration. This phenomenon of '*counterurbanization*'[xxvii] heralds the rise of more dispersed, non-metropolitan yet urban areas and of a more harmonious regional distribution of networks of human settlements that of[er work, living and recreations in close proximity. This pattern of human settlements is similar to that described by Lewis Mumford as the 'invisible city'.[xxviii]

Since I have pleaded from the beginning against any determinisrn of our future, I have no doubt at all that there is a real alternative to the deleterious effects of the present megapolis. If we want a better social environment remedial measures have to be directed, first, to a change of the environment, reducing its most damaging pressures, and second, to changes of the society, making future humans better able to cope with their habitat. As Dubos reminds us,[xxix] man can adjust himself quickly to harsh, unusual and even potentially dangerous environments. I do not behieve that we are helpless victims of urban society which is a product of everv one of us rather than irnposed on us frorn the outside.[xxx] Based on this ínsight we should search for ways

to master our habitat and to make our environrnent more suitable by avoiding the disadvantages of an urban gigantism. But trying te prevent gígantism does not mean a return to the rural setting. Rather. we must adjust the architecture and the urban desígn to make the city qualitatively better —with more space, cleaner air, less congestion, and decreased sensory overload— and let its inhabitants have a more pleasant and attractive lifestyle so that it becomes a place apt not only for 'living' and 'surviving', but also for 'living together' (*convivir*, we say in Spanish).

Scholars should commit themselves to 'producing' a new type of man with expertise in many sciences —mainly in those concerned with education and knowledge of the psychobiological development of humans —who is motivated to participate in the creation of a better urban environment. For that. Tinbergen[xxxi] suggests a biologically more balanced form of education with more scope for plavful. exploratory and imitative self-teaching. I would add to such a regimen more self-control and seek to eliminate the sense of indifference towards others. Antisocial behavior could be counteracted bv mutual interaction, and mechanisms of adaptation could be developed adequate to the peculiar environmental tone and experiences of each city.

Sorne of the articles in this collection may give the impression that man has lost control of his environment. It may even seem that 'he is oblivious to what his real needs are, to what he wants to do, and, of where to go frorn here," to cite Psomopouhos.[xxxii] But we should not fall prey to defeatism faced with menacing trends. On the contrary, we must help man in finding his own road. As the Spanish proverb says: *prevenir vale mas que curar*, or in English. an ounce of prevention is worth a pound of cure.

NOTES

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   _____ Vida humana y Biología (1975). *GER*, vol. 23; pp 509-511
2. Dwyer. Johnson-Marshall and Robertson have potnted out that rather than a trend toward a future enormous conurbation—in its pejorative meaning of spreading of a great coral reef (Geddt 1915).—today we can observe a centrifugal force of out-migratton from many big cities: this 'counterurbanization' in terms of Bryan Berry (1981): "implyes the growth of non-metropolitan arces, of more self-sustaining and harmonious distribution through the region of independent networks of human settlements thai offer work, líving and recreation in

close proximity.

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12. Richard Vernier of the Harvard School of Pubiic Health in Boston has exposed healthy dogs to stress situations such as overcrowding before and after inducing heart damage. He found thai the healthy dogs exposed to stress respond by *arrhyihmia.* slowing down of their normal heart rate. As a result severe uncoordination of the fibers of the heart, 'fibritation' occurs. And finally, the heart ceases to funciion as a pump, becomes asystolic causing the death of the animal. \Vhen dogs are electricallv induced to arrhythmia, the amount of current needed is greater than when they are exposed to stress factors such as overcrowding. To simulate human disease in dogs. Dr. Vernier has blocked the dog's coronary artery. After complete recovery he has moved the dog to a stress environment and arrhythmia was produced. This suggests that people suffering from heart distase enhance the risk of dying when living in a stressful metropolitan environment (communication by Dr. Diana L. Mendoza at l3th ICUS
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47

PREVENTION OF AGGRESSION AND STRESS BY THE MEANS OF RELAXATION TECHNIQUES

by

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1. INTRODUCTION

It is generally accepted that aggressive behavior is a specific feature of a more general pattern of stress reactions in response to a changing environment[1]. For example, vulnerability to emotional distress may be a fact related to the increased risk of aggression in abused children, as suggested by Skarpa and Kolko[2] who found that physically abused children who 'internalized' their abuse experiences were more likely to become aggressive[3,4]. The level of the student's anger and hostility was significantly connected with the frequency and intensity of stress in school[5,6].

This close relationship between stress and aggression is also observed in the many emotional effects of stressful environmental factors, which can be elicitors of aggression. For instance, noise itself can increase aggression[7]. And heat is also a moderately effective stimulus for increasing aggression, in humans[8,9].

Stress can be defined as a set of particular relationships between an individual and a situation he thinks surpassing his own resources and threatening his personal wellbeing[10]. The physiological response to the stressor is

mediated by nervous and endocrine systems functioning as adaptation mechanisms[11]. At a physiological level, the nervous system shows a sympathetic activation with the following possible effects: pupil widening, sweating, heart frequency increase, peripheral vasoconstriction, digestion inhibition, basal metabolism increase, and, especially, an increase of the muscle tension. At a psychological level, stress also affects thoughts, feelings or beliefs. The aggressive response is supported by the same neurological and psychological systems mentioned.

The stress response means an important increase of physiological and psychological activation. It prepares the organism to react quickly and vigorously to possible situation exigencies, and it primes a quicker and more powerful information processing; an improved perception of the situation and its demands, a more efficient search for solutions and a better selection of adequate behaviors for facing the detected demands. Therefore, the stress response, far from being harmful in itself, it is an adaptive reaction that provides the organism with a considerable amount of resources.

A frequently used alternative to face stressing situations is confrontation[11-12], which can be displayed in different forms of aggression[5,13]. This close relationship between aggression and stress suggests that the reduction of stress levels through relaxation techniques could be beneficial to reduce aggressive and violent behavior [14,15]. This explains the importance of successful intervention programs in order to cope with stress[16-17] and consequently, in the prevention and control of aggressive and violent attitudes[6,14,16].Given the importance of preventing or at least lowering the manifestations of violence in society any technique that leads to the lowering of aggressive response in individuals is important. One of the multiple ways to reduce stress and to prevent its negative effects on health are relaxation techniques. Since under stress the violent behavior is more likely to occur when response is basic and emotional, being the thought process bypased[2].The goal of the relaxation procedures is to reduce the emotional noise allowing a decision making process more balanced[16,18] and producing a state that is the opposite to the fight or flight response. Thus relaxation techniques teach people to have control over their own emotional systems and balance the stress response[19-20]. In the clinical practice those techniques are used as complementary for the treatment of psychosomatic diseases as high blood pressure and bulimia nervosa[18]. There are many techniques of relaxation in practice[18].Some techniques like biofeedback, are excellent for advanced training and clinical treatment but equipment is costly when used by large groups. Relaxation techniques like yoga and meditation are often considered often mostly a subjective experience, not following the standard scientific norms.

Their practice often needs a considerable length of time to achieve results. On the contrary, other procedures, such as progressive relaxation (Jacobson[21]),and autogenic training (Schultz[22]), can be verified by counting and pulse beats to give a quantitative reference to practitioners in an easy and inexpensive way. This is the reason why the effects on stress and aggression of this two methods was analyzed. Their sequential application of first Jacobson and second Schultz method's was selected to sinergize the effect.

2. METHOD

Sample: 100 subjects of both sexes (47 males,53 females) with an average age of 20 years were randomly chosen out of a total of 200 students in their third year of Medicine.

Physiological variables: The subjects themselves measured respiratory frequency and pulse beats per minute before and after relaxation
training exercises. The measures were done with the subject seated in a comfortable position. The following intructions were given : " to get the pulse place the first two fingers (pointer and middle finger) of one hand on the underside of your other waist, on the thumb side. Feel for your pulse and count the number of pulses for a minute" And: "To count the breath, put the hands on your chest with each middle finger touching the center of the opposite side collarbone .Feel the incoming breath and count the number of in breaths per minute[18].

Relaxation techniques: relaxation training exercises consisting on contracting and relaxing segments of the body in a sequential way and feeling the weight and heath of different segments of the body starting with the extremities .Both techniques (Jacobson's[21] and Shultz's[22] method's)followed standard procedures in its application.

The total application time lasted two hours. 15 minutes was used to give explanations about the relaxation techniques, 10 minutes for measuring the respiratory and pulse frequency (5 minutes per pre and post the technique), and 95 minutes for the specific technique.

Statistics: The obtained information was tabulated, analyzed and compared using the Statistical Pack SPSS V 9.0[23]. Z Kolmogorov-Smirnov test and "t" of Students were also applied.

3. RESULTS AND DISCUSSION

Since all distributions were "normal" (according to the Kolmogorov-Smirnov test, "p" was greater than 0.05 in all the variables of the sample), it was correct to compare them with another similar universe. Parametrical statistic (Student "t") was applied in order to compare differences between previous and subsequent respiratory frequency and previous and subsequent heart frequency. High statistically significant differences were found for both biological

variables (p < 0.0001), with an "F" value of 415,52 for respiratory frequency and of 848,48 for heart frequency.

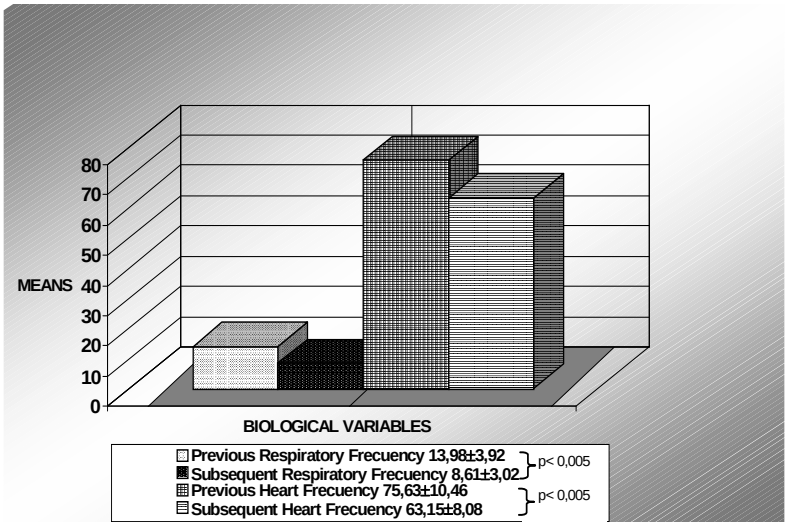
A comparison of data obtained before and after the relaxation exercises (Table 1 and Figure 1) showed a decrease of both biological variables:
Breath frequency went from 14 cycles down to 8.5, in a uniform way (a standard deviation rank of 3.02, and a dispersion fluctuation in a rank from 6 to 10 in the percentiles 25 and 75); and heart rate frequency went down to down from 75 beats per minute to 62, with a standard deviation of 8.08, and a dispersion of 57.5 and 69 in the percentiles 25 and 75.

TABLE 1. Statistics of biological variables

Variable (n)	Median (P_{25}-P_{75})	Rank
Previous Respiratory Frequency (100)	14 (11-16)	5-26
Subsequent Respiratory Frequency (100)	8,5 (6-10)	3-18
Previous Heart Frequency (101)	75 (68,5-80)	54-98
Subsequent Heart Frequency (101)	62 (57,5-69)	36-80

Font: Selected Sample

FIGURE 1. Mean of the biological variables before and after relaxation exercises



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These results suggest that the implementation Jacobson's[18] and Shultz's[19] method's would be beneficial in both health and educational systems. The training of this relaxation techniques is easy to learn and its application takes a very short time. Consequently students, professionals or other non specialized groups can accept them easily. In addition, participants practicing these procedures also do not feel that they are targets for anti-aggressivity programs as the "pretended" aim is stress reduction.

4. CONCLUSION

1. Heart rate frequency decreased after relaxation techniques.
2. Respiratory frequency decreased after relaxation techniques.
3. Consequently, the relaxation technique was clearly effective for reducing some biological responses related to stress.
4. This decrease in stress may help to prevent some of its negative effects on health and on personal and social life.
5. Given the mentioned link between stress and aggression, relaxation techniques might also help in the prevention of the aggressive response.

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